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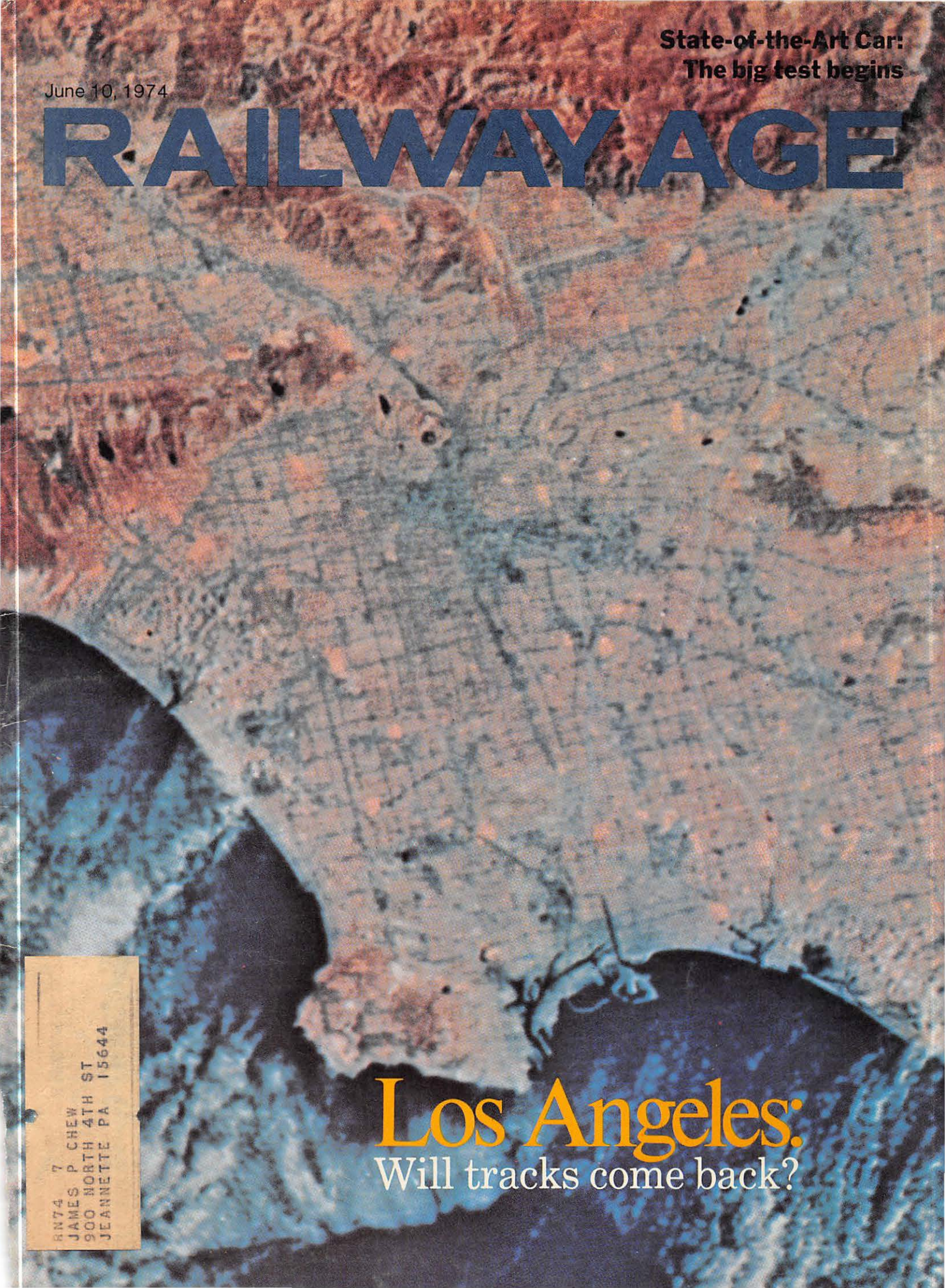

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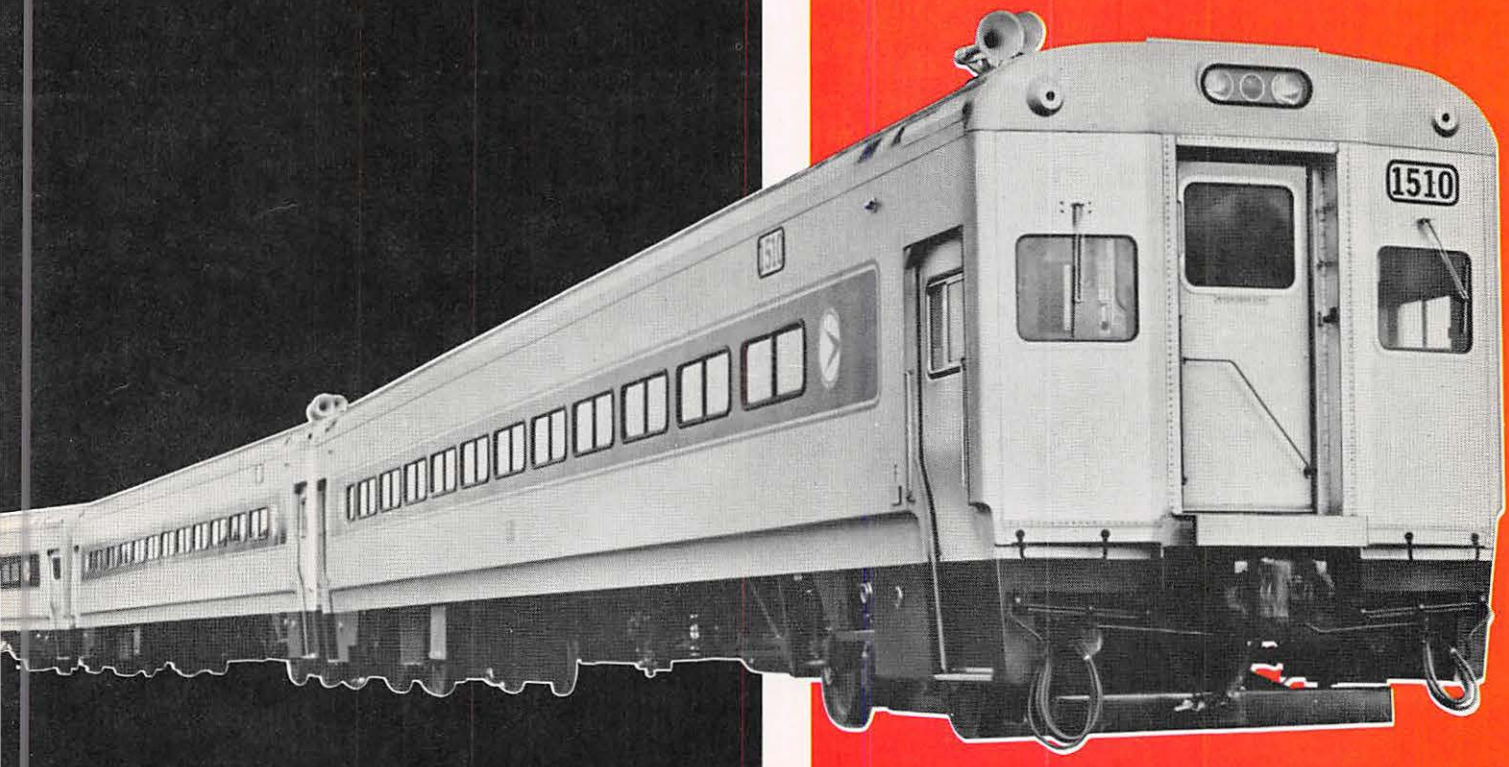

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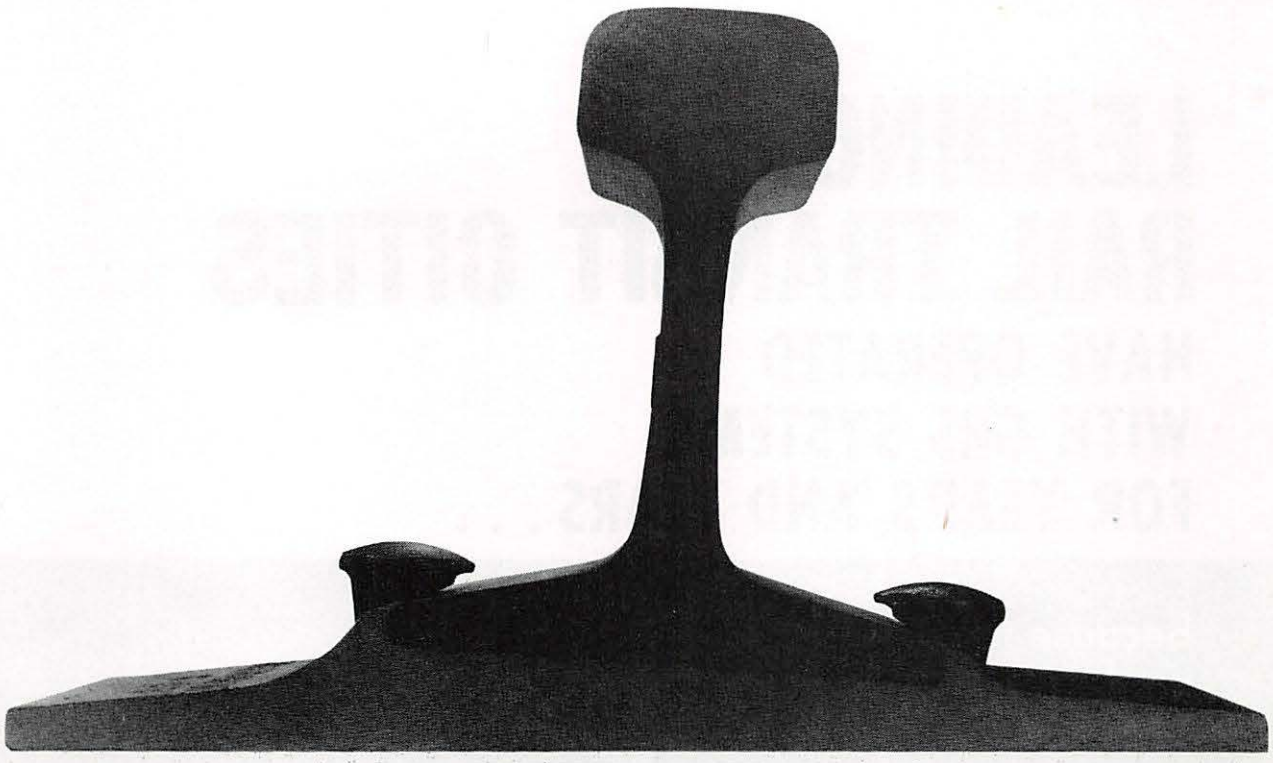

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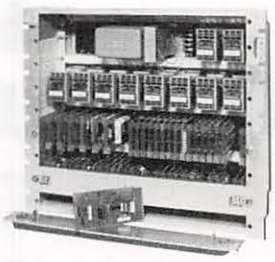

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Inside

LUTHER S. MILLER

SCHIZOPHRENIA AT DOT?

The principal interest of this magazine during the 118 years of its existence has been, and continues to be, to encourage the efficient utilization—and, in recent times, the sheer survival and preservation—of freight railroads. In this respect, Transportation Secretary Claude S. Brinegar has proved to be such a wise and helpful ally that it seems ungrateful to quarrel with him about anything. Mr. Brinegar skilfully marshaled Administration forces behind the Congressional compromise that brought about the landmark Northeast Rail Reorganization Act. And he has now sent to Congress the Transportation Improvement Act which, while not without flaws, is still in our judgment as sound a piece of legislation as the Department has ever drafted.

But we are also profoundly committed to the proposition that fixed guideway transportation in general, and rail transportation in particular, still has a major role to play in the movement of people, especially within metropolitan areas; so we must share the concern of the transit industry over what appears to be DOT's growing infatuation with automobiles and buses as the ultimate solution to this nation's worsening problems of urban and suburban mobility.

Under Secretary John Barnum made a speech in Los Angeles the other day in which he suggested that Southern California, with its spaghetti of freeways, is a "mecca" that ought to be prayerfully visited by all transportation planners. Secretary Brinegar's own statements have been less than reassuring. He finds buses to be "cost-effective," rail transit just costly. The Secretary is a thrifty man with the taxpayer's dollar; given his limited budget, and the pressures which the Office of Management and Budget is exerting to keep all domestic spending down, one can understand his problem. But what is cheap today could prove very costly tomorrow. How would today's "cost/benefit" experts have resolved the subway-vs-horsedrawn-cars conflict a century ago?

A CANDID CONVERSATION WITH MR. HERRINGER

What precisely *is* DOT's stance on the "rail vs bus" question? After Mr. Brinegar himself, the man most immediately involved at the policy level is Frank E. Herringer, head of the Urban Mass Transportation Administration. It was to Mr. Herringer that Railway Age went recently with the questions that have become such a burning issue today in the transit industry. His answers (p. 21) will provide especially interesting reading for the planners in Atlanta and Baltimore who, believing they had firm promises from DOT for high levels of Federal funding, are now at the point of no return in building costly rail transit systems; and for those in Los Angeles County who, despite repeated visits by DOT speechmakers singing the praises of the freeways, are pressing ahead with plans for the kind of public transportation that two-thirds of the voters recently polled said they would support (p. 30).

Actually, there is more than one way to get Federal money for mass transit—provided communities are prepared to sacrifice a few miles of concrete. In "Watching Washington" (p. 16), Richard M.M. McConnell describes how Boston, using the Interstate Transfer provision of the Federal Highway Act of 1973, has been able to divert $600 million to public transit.

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RAILWAY AGE

JUNE 10, 1974

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Short and Significant

DOT OKAYS NEW CARS FOR AMTRAK

The Department of Transportation on June 3 finally announced approval of a large part of a new-equipment package requested by Amtrak several weeks ago (RA, May 13, p. 18). DOT approved purchase of 200 single-level, high-density coaches costing an estimated $82 million; and six turbine-powered, five-car trainsets to be supplied by the French firm of ANF-Frangeco for service in the Midwest (including two which have been in test service since last Oct. 1). DOT turned down Amtrak's request for 14 additional turbo trainsets for service between New York and Boston. DOT feels that the lines between New Haven and Boston can be electrified within the next three to five years.

BACKLOG CONTINUES 16-MONTH CLIMB

For the 16th straight month the backlog of undelivered new cars has continued to climb; after 11,412 cars were ordered from carbuilders in April and 1,981 from railroad shops, the backlog on May 1, 1974, was 88,335. The carbuilders' share of this, 82,427, was the highest such figure since Dec. 1, 1951, but the railroad shop backlog continued at a modest 5,908. Through four months of 1974, 41,884 new cars have been ordered. Deliveries actually sagged to 4,723 during April, down from 5,355 in March.

READ THE INDICES—AND WEEP

As of April 1973, the rail index of fuel prices (1967=100) stood at 127.1. In January of this year, it had climbed to 191.6. But by April 1974, it was all the way to 271.2. The index was lowest in the Southern District at 255.3 and highest in the Western District at 284.9, with the Eastern District in the middle at 262.1. Nationwide, the total index of fuel, materials and supplies as of April stood at 181.9—but at only 146.5 if fuel is excluded.

RATE BOOSTS START TO TAKE HOLD

Santa Fe has begun to feel the effects of increased revenue from fuel surcharges and the 4% general rate increase granted in March. For the first quarter, operating income was down from first-quarter 1973 levels although traffic volume was up slightly. But in April, operating income was up by 18% on volume approximately equal to that of April '73. And the forecast from Chairman and Chief Executive Officer John S. Reed? "An additional rate increase expected to be effective early in June should assure that the remainder of the year for the railway will follow the pattern set in April."

ANATOMY OF A BACKLOG, P-S STYLE

What's the Pullman-Standard contribution to the $2-billion-plus order backlog (RA, May 13, p. 8) which Pullman Inc. is reporting? For one thing, more than 30,000 freight cars, including more than 14,000 ordered this year. For another, the $210-million, 745-car transit order for New York. On the freight side, Pullman President Samuel B. Casey, Jr., notes that "most of these orders were sold with full cost escalation provisions. . . .Production of some of these cars is scheduled to run into 1976." As for the transit business, Casey told Pullman shareholders that "although we are not expecting any 1974 profit contributions from this [New York] contract, we do anticipate, as full production gets under way in late 1974, that 1975 earnings will reflect benefits of increased production efficiency and significant shipments. We are committed to completing these subway cars on a profitable basis." Casey also had these comments on the passenger-car business generally: "Pullman elected to stay in this difficult business for two reasons: One, to make a contribution to our financial balance sheet. Two, to make a contribution to our social balance sheet. The need for mass transit is basic to survival of our cities and we have much in Pullman to contribute."

UNIONS MAKING WAGE/BENEFIT PLANS

Representatives of 10 rail unions—including the three largest—got together for a strategy session in Chicago late last month, a session with a two-fold purpose: (1) To plan for the upcoming 1974-75 wage/benefit movement, and (2) to talk over progress in restructuring the Railroad Retirement System. Represented were UTU, the Clerks, the Signalmen, the Maintenance of Way Employes, the Supervisors, the Train Dispatchers, the Carmen and the Railway Employes' Department (now representing four unions, including the Carmen). Results of the discussions were not reported.

MILWAUKEE ROAD: NOW ALL-DIESEL

Milwaukee Road will throw the switch to "off" June 16 on its west-end electrification, and as of that date all operations on the 10,200-mile system will be handled by diesel-electric motive power for the first time. Since the road made the decision to abandon electrification more than a year ago, crews have been tearing out the catenary and other related facilities on the Coast Division; after June 16, the dismantling process—a job that may take a year and a half—will begin on the 440-mile electrified stretch on the Rocky Mountain Division.

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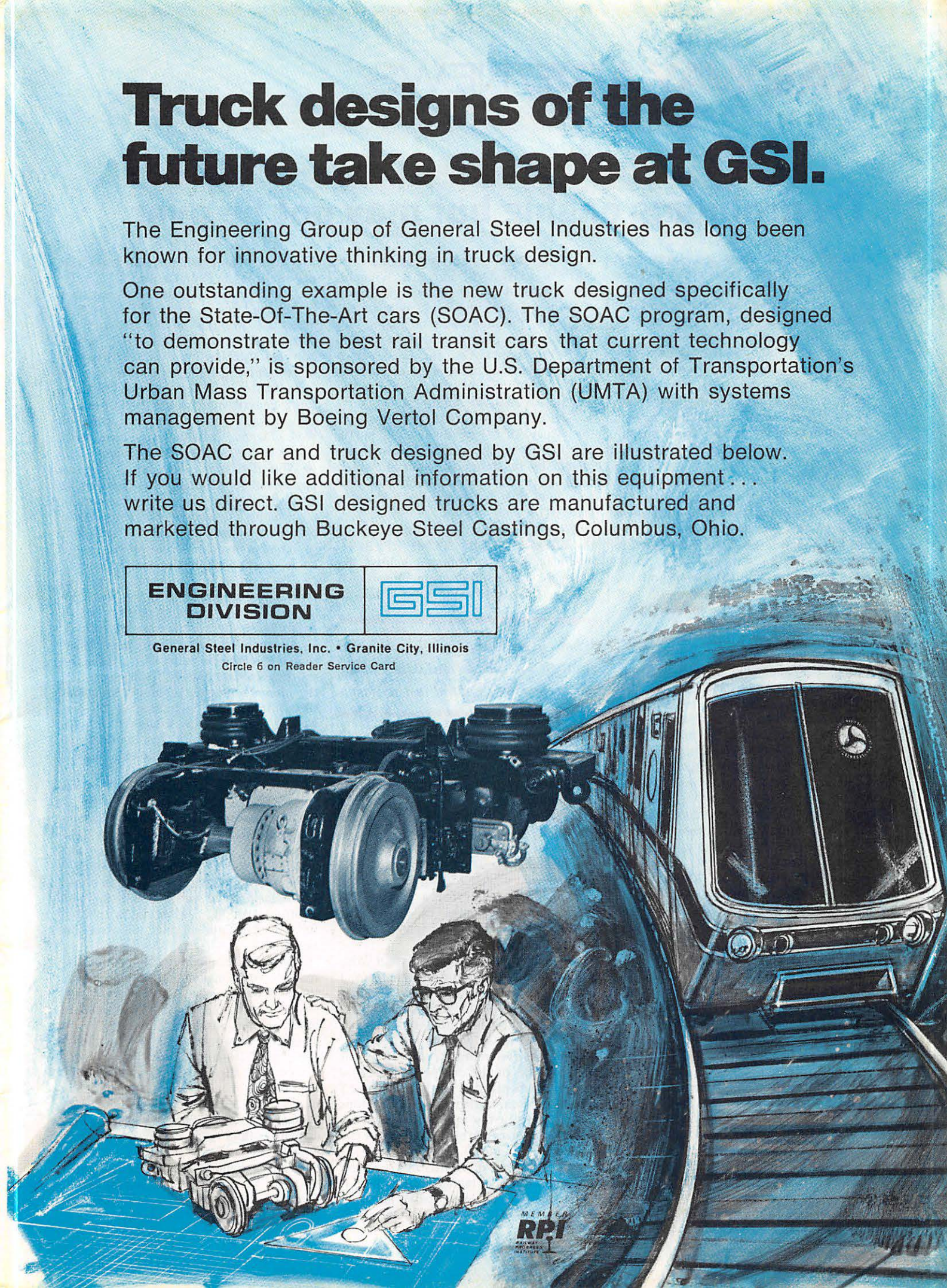


Tie problems easing but may not be over

During a year when the tie-renewal programs of many roads are being seriously hampered by a shortage of ties, tie producers and railroad tie-procurement officers are beaming with good news.

Tie production, they report, has undergone a dramatic turnaround. Tie output, they say, has turned sharply upward from recent low levels. The result is that at least some tie-procurement officers are saying they have a good chance of being able to obtain the ties they will need for 1975 tie-renewal programs.

Thus, the atmosphere is one in which there is a tendency to fall into the relaxed viewpoint that a crisis has been dissolved and that tie-procurement worries have been left behind. But there are observers in the industry who, motivated by a cautious attitude engendered partly at least by memories of past events, are raising some pointed questions.

● **What about the future?** Looking beyond the immediate situation, they are asking, for example, what the future demand for crossties is apt to be, and whether the tie-producing industry can be geared up to meet that demand. Also, they ask, what, if anything, is being done to smooth out the peaks and valleys that have characterized tie demand in the past? The erratic demand for ties over the years, more than any other single factor, was responsible for the recent shortage, say these observers.

But for the time being at least the prospects are that, thanks to recent increases in production, the cross-tie crunch is to be considerably eased. To be sure, a shortage of gondolas for transporting the green ties from producing areas to treating plants interposes something of a hitch. Another factor is that the seasoning period required for most ties introduces a time lag between production and delivery to the track. So it may be the end of the year before the railroads may experience an increased flow of ties to the track ready for insertion.

But the turnaround is coming. The improved situation, which evidently had been developing for some time, surfaced at a discussion of the crosstie situation held recently at Chicago during a meeting co-sponsored by the Transportation Materials Management Forum and the Railway Progress Institute.

The discussion was moderated jointly by W.R. Clark, purchasing agent of the Norfolk & Western, and R.R. Wingard, vice president of the Railway Tie Association. At that time Wingard was assistant vice president and manager, railroad sales and planning, Forest Products Division, Koppers Co., Inc. He has since been appointed manager of marketing-Forest Products Division, retaining the title of assistant vice president.

Charts presented at the meeting told the story of a rapid decline in tie production in the early Seventies, followed by a dramatic reversal which brought production in March this year to a new high for that month since at least 1970.

● **Why tie production is up.** Much of the discussion at the TMMF-RPI meeting dealt with the reasons behind the reversal in tie production. Important among these are the substantial increases in prices now being commanded by ties. For example, prices being paid for main-line ties by the Frisco are up an average of about $3.00 per tie, or 67%, compared to a year ago, and are "still going up," according to R.J. Doelling, manager of purchases and stores.

What, if anything, is being done to smooth out peaks and valleys that characterized demand in the past?

The same general story is told by purchasing officers of other roads. One result is that prices paid for ties are now sufficient to put ties on a competitive basis with other uses of rough-sawn hardwood lumber such as pallets, furniture framing and flooring.

"At this point in time," said Wingard, "with few territorial exceptions, I believe we are competitive in the raw material market. The exercise has been painful, and it has caused tie prices to escalate, but it had to be done."

● **Railroad vs railroad.** But there is another side of the competitive picture that was mentioned with a tinge of regret by some railroaders. It develops that frequently the railroads find themselves competing with each other for the same tie. A factor in this situation is that some railroads, unable to obtain needed ties in their regular producing territories, are "reaching out beyond their normal sources for ties," said M.P. Richards, vice president purchases and materials of the Penn Central.

Other factors mentioned as having a bearing in causing tie production to go up is a softening in the demand for hardwood by other industries, mainly housing, and the improved weather that has prevailed in producing territories. In fact, "better weather has been the main thing behind an increase in tie production in Santa Fe territory," according to W.C. Meares, assistant director, purchases and materials, of that road.

● **Why deliveries may lag.** While the upsurge in tie production is regarded as encouraging, the increase in the supply of crossties is generally not expected to become evident right away in the form of larger deliveries for insertion in the track. Except where ties are vapor-dried or are subjected to other forms of artificial seasoning, green ties must be air-seasoned for varying periods up to about a year before they can be treated.

Another factor frequently mentioned that may cause tie deliveries to lag is the shortage of cars needed for transporting the increased supply of ties. Noting that the Penn Central is hampered by not having enough cars available for tie haulage, Richards said that the railroads will find it necessary to "police" the car situation.

Koppers' Wingard said that a "serious deterrent" to the production of crossties is the non-availability of rail cars in which to load the green ties from field concentration yards to processing and treatment plants. "In a recent count," he said, "my company alone had some 1,000 carloads of green ties in the field awaiting gondolas for loading, with woefully inadequate supplies of gondolas available."

Even so, the bulge in tie production is expected to make itself felt at least by the end of the year. Santa Fe's Meares said, for example, that "if the weather holds up the Santa Fe may come close to getting its quota of ties by the end of the year." Doelling of the Frisco mentioned that the first quarter receipts of ties on his road "were closer to the quota." By the end of the year, said Wingard, "we will likely have more ties available than the railroads have ordered."

● **Will the balance be maintained?** With current tie production having been brought into at least approximate balance with current demand, the question

remains whether this balance will be maintained in the future. Tie producers point to studies that indicate the required trees are available; now they want to know what the demand is going to be so that they can make arrangements for meeting it. The question was raised by Wingard in remarks before the TMMF-RPI meeting.

"Do we know," he asked, "what the real demand for ties is now and what it is expected to be in the future? No, we do not. The FRA talks in terms of 40 million ties per year as a minimum. RTA statistics indicate a current backlog of about 35 million ties. Reports of the American Railway Engineering Association show an average annual installation of 22 million ties or less, while the January survey of Class I railroads conducted by Railway Age indicated that the intention of the railroads was to install only about 20 or 21 million ties in 1974. Add to these 'facts' the unmeasured demand for ties to be used in 'industrial' trackage, and you have another indicator to be considered."

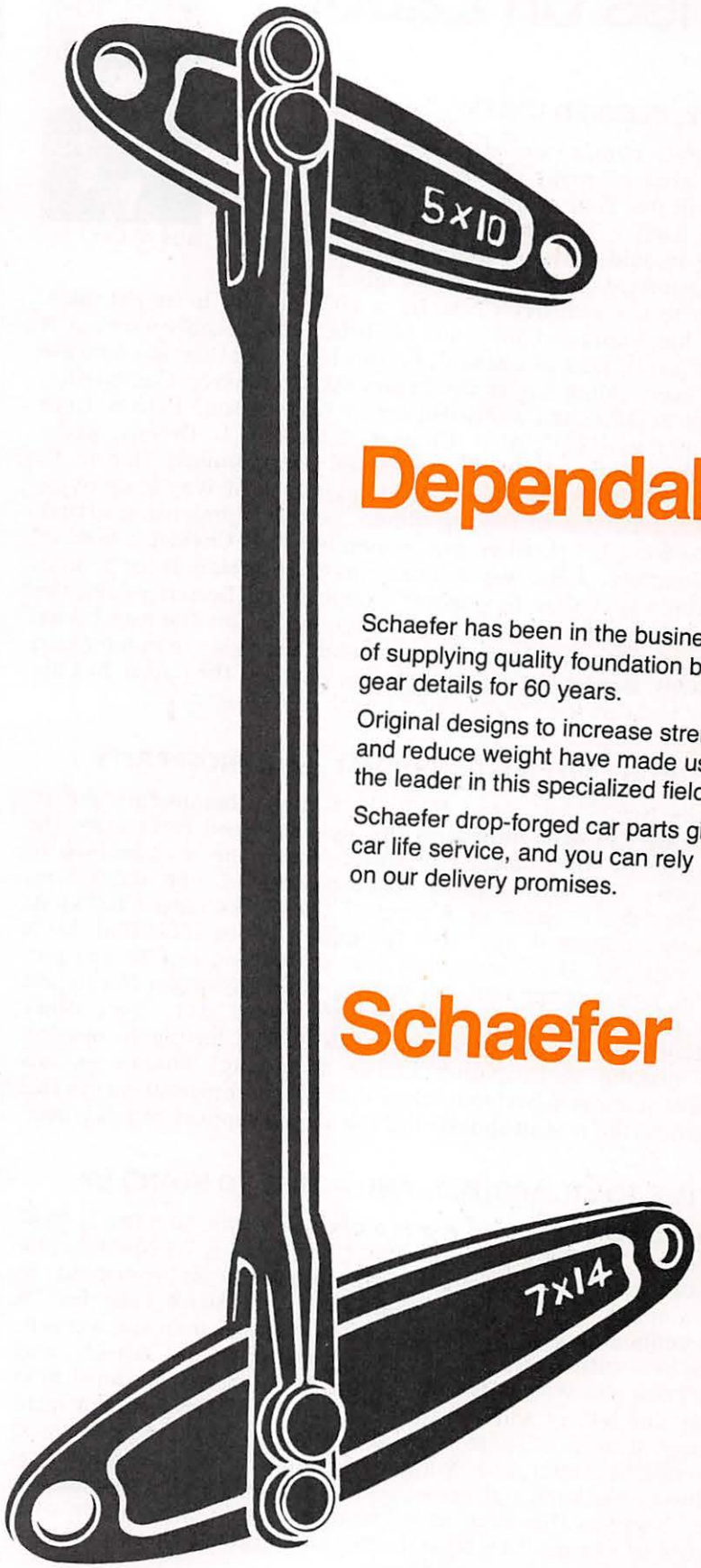
Noting that "there is nearly a 100% difference between the high and low 'guesses'," Wingard explained in forceful terms why more accurate information is needed on the demand of ties. He said:

"In an industry such as tie production, where the cost of building and operating tie mills has reached unparelleled levels of capital investment, we need more hard data over longer time spans if we are to encourage the investment needed."

The matter of the greater investment required by sawmill operators was also mentioned by the NW's Clark. Noting that this investment does not lend itself to peaks and valleys of demand he said "it is purchasing's responsibility to apprise management of what this does to producers. If you contemplate purchasing two million cross-ties this year and only one million next year, it is in the best interest of the industry to purchase 1,500,000 each year and let the industry have some continuity."

● **It's up to management.** All tie men, whether they are suppliers or railroaders are fully aware that several factors are involved in determining the demand for ties, that is, the orders placed by the railroads. One is the actual requirements of the tracks as determined by track engineers. Another is the amount of money made available by management for the purchase and insertion of ties.

In the past it is the latter factor which, more often than otherwise, has determined the actual demand. But this situation could change. Traffic loads are getting heavier and also the tie condition must be brought into compliance with the FRA Track Safety Standards. Management, therefore, may find it necessary to adopt a more generous attitude in allotting money for tie programs, thereby boosting tie demand. ■



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UNITY, BLESSED UNITY

Hardshell cynics are still fond of their belief that railroads and rail labor cannot and will not find common ground, that rail labor itself is a house divided. But the cynics should perhaps take a look at what has happened in the ranks of labor with regard to the industry's case for a 10% increase in freight rates. What has happened may not be totally unprecedented—but it surely has to rank as unusual. Letters regarding this rate increase have been piling up at the Interstate Commerce Commission offices at 12th and Constitution in Washington. Letters from such men as UTU's Al H. Chesser, BRAC's C.L. Dennis, James E. Yost of the Railway Employes' Department, Harold C. Crotty of the Brotherhood of Maintenance of Way Employes, C.J. Chamberlain of the Signalmen. Letters representing virtually *all* of rail labor, when you remember that Chesser is head of the Congress of Railway Unions and Chamberlain is top man in the Railway Labor Executives' Association. Letters asking the ICC to take prompt and affirmative action on the rate boost. Letters noting both management's and labor's stake in increased revenues. But letters mainly pointing out that the *nation* has the major stake in the creation of a healthier industry.

THE GOAL: NOT JUST SURVIVAL, BUT PROSPERITY

As the Signalmen's (and RLEA's) Chuck Chamberlain put it, "No one can over-emphasize the absolute need to increase the viability of the railroad industry from the standpoints of shippers, our environment, conservation of our natural resources, the country as a whole." As UTU's (and CRU's) Al Chesser summed it up, "It is the policy of the UTU that this is our industry. We want it not just to survive, but to prosper. Better jobs through industry growth—that's good for our nation and its economy." Lobbying? Of course not. You don't "lobby" the ICC. But there's no law against having an opinion and making that opinion known forcefully. There's no law against making it perfectly clear that a given proposition—in this instance, the rate proposal—has the strong support of rail labor.

A TIME TO SIT AROUND—AND A TIME TO STAND UP

The action by the union chiefs relates, in a way, to a firmly-held belief of BN Chairman and Chief Exec Louis W. Menk in the broad area of working for transportation improvement in Washington, in Congress specifically. Lou Menk calls for "a determined and impatient alliance of railroad men and women, together with their families and neighbors and friends—and everyone else we can recruit—to stir the Congress. We must help with our letters and personal visits, our speeches and private conversations. . . .There is no one to carry the message except the railroad men and women of America. For decades, this industry has been out-maneuvered and out-muscled in Washington. Now, in this time of decision, we must become our own agents of change." In other words, stand up and be counted—or just sit there and be counted out.

The industry's, management's, record on "working together" is much improved. Management and labor have proved that *they* can work together. Now, it's time for the next big step. In Lou Menk's words, "Now is the time for us to unite as never before in history, so that we can speak as one powerful voice."

Nixon nominates USRA directors

After a long delay attributable to growing White House wishes to keep as many Senators and Representatives as happy as possible, President Nixon has nominated seven directors for the United States Railway Association:

—William Scranton, former Republican governor of Pennsylvania.

—Gale B. Aydelotte, chairman of the Denver & Rio Grande Western.

—James E. Burke, vice president of the United Transportation Union.

—William K. Smith, vice president of General Mills.

—Clifford G. McIntire, legislative director of the American Farm Bureau.

—Frank H. Blatz, Jr., former Republican mayor of Plainfield, N.J.

—Samuel Payne of Morgan Stanley and Co.

Nomination of the seven members is expected to lead to quick scheduling of Senate hearings aimed at confirming the seven as well as the previously named chairman of USRA, Arthur D. Lewis.

Harriman Awards go to 17 roads

Seventeen railroads received recognition for their 1973 employee safety achievements at the annual E.H. Harriman Memorial Awards presentation in Washington. Chairman John H. Reed of the National Transportation Safety Board presided. Annually awards are made to four groups of railroads—three based on manhours worked and the fourth to switching lines.

The Group A awards (over 20 million manhours) went to Santa Fe (Gold Medal); Southern Pacific (Silver); and Southern (Bronze). The Group B (5 to 20 million manhours) winners were St. Louis Southwestern (Gold); Lehigh Valley (Silver); and Denver & Rio Grande Western (Bronze). Group C (under 5 million manhours) Gold Medalist was Delaware & Hudson, followed by Florida East Coast, and Bangor & Aroostook.

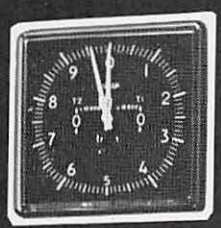
Union Railroad took the Gold Medal among switching and terminal lines, followed by Philadelphia, Bethlehem & New England (Silver) and Kansas City Terminal and Kentucky & Indiana Terminal (both Bronze). Certificates of commendation went to Illinois Central Gulf (Group A); Boston & Maine (Group B): Akron, Canton & Youngstown (Group C); and Conemaugh & Black Lick (Group ST).

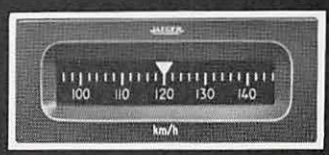
Photo SNCF

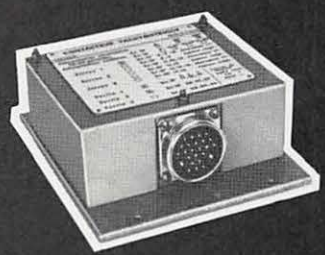
Photo RATP

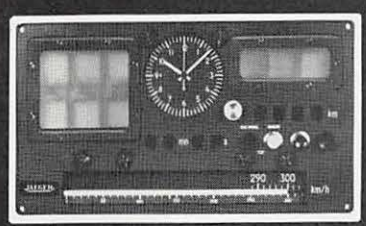
JAEGER

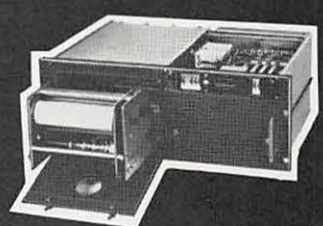
SAFETY - PERFORMANCE











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Boston And San Francisco Have Seen The Light

The Boeing Light Rail Vehicle

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Boeing's 73-foot long Standard Light Rail Vehicle contains many new features including a flush articulated mid-section that permits the vehicle to navigate tight curves. Escalator type steps permit passengers to get on and off from both street level and subway platforms. A solid state D.C. chopper propulsion control system provides smooth acceleration, dynamic braking and reduced electrical consumption. Resilient wheels reduce interior and exterior noise levels.

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Watching Washington

R.M.M. McCONNELL

BOSTON'S WINDFALL

When the Federal-Aid Highway Act of 1973 finally got through Congress last year after a long and bitter fight, mass transit enthusiasts applauded the small section of the legislation that had caused the most Congressional debate: a provision allowing Highway Trust Fund money (or equivalents in general funds) to be used for mass transit projects.

Predictably, saying Trust Fund money *could* be diverted from highway construction to rail and bus transportation programs didn't guarantee that it *would* be. Supporters of the status quo for the long-sacrosanct highway program hemmed in the provision with enough requirements to make sure that no such transfer of funds would be made lightly.

Well, at the end of May one group met all the requirements and the years of planning and politicking paid off. Some $671 million in Federal funds scheduled for use to complete Interstates 95 and 695 in the Boston, Mass., area became available for mass transit programs. In view of the fact that the total Urban Mass Transportation Administration budget for 1974 was $872 million, the $671 million now free to flow into Boston-area mass transit rightfully appears to be a windfall of major proportions.

Precisely how this windfall will be spent remains to be seen. Transportation Secretary Claude S. Brinegar, in announcing availability of the money, indicated that over $600 million would be used for mass transit projects—including rail rapid transit and the purchase of rolling stock for both rail and bus operations—while some money would still be used for highway construction. In addition, Brinegar is known to be a strong supporter of bus rather than rail mass transit, and this could have some impact on exactly where the Federal money will go.

BAY STATE GOVERNOR WORKS EFFECTIVELY

On the other hand, Massachusetts Gov. Francis Sargent has provided strong leadership for rail transit in the Boston area, pouring state money into the Massachusetts Bay Transportation Authority that runs Boston-area transit lines. At the same time, Sargent has been carefully planning to capitalize on a break in the Highway Trust Fund. As long ago as 1971, he froze construction on a major highway project, using public opposition to the road to bolster hope that something better might come along. And in February, the accuracy of Sargent's planning was reflected in a statement that the Interstate transfer provision of the Highway Act could make about $600 million available for Massachusetts mass transit programs.

As important as the money is for Massachusetts, the real significance of the $671 million may lie in the encouragement it gives other areas to go after Highway Trust Fund money. In Washington, for example, public debate has been raging for years over completion of Interstate 66 and 95, both of which would dump more motorists into an already overcrowded downtown area, according to opponents. With the new subway offering a way out of the impasse—albeit at a steadily accelerating cost—the example of what happened in Massachusetts may show Washington area officials a way to end the road controversy and at the same time pay for the subway.

America is watching this train

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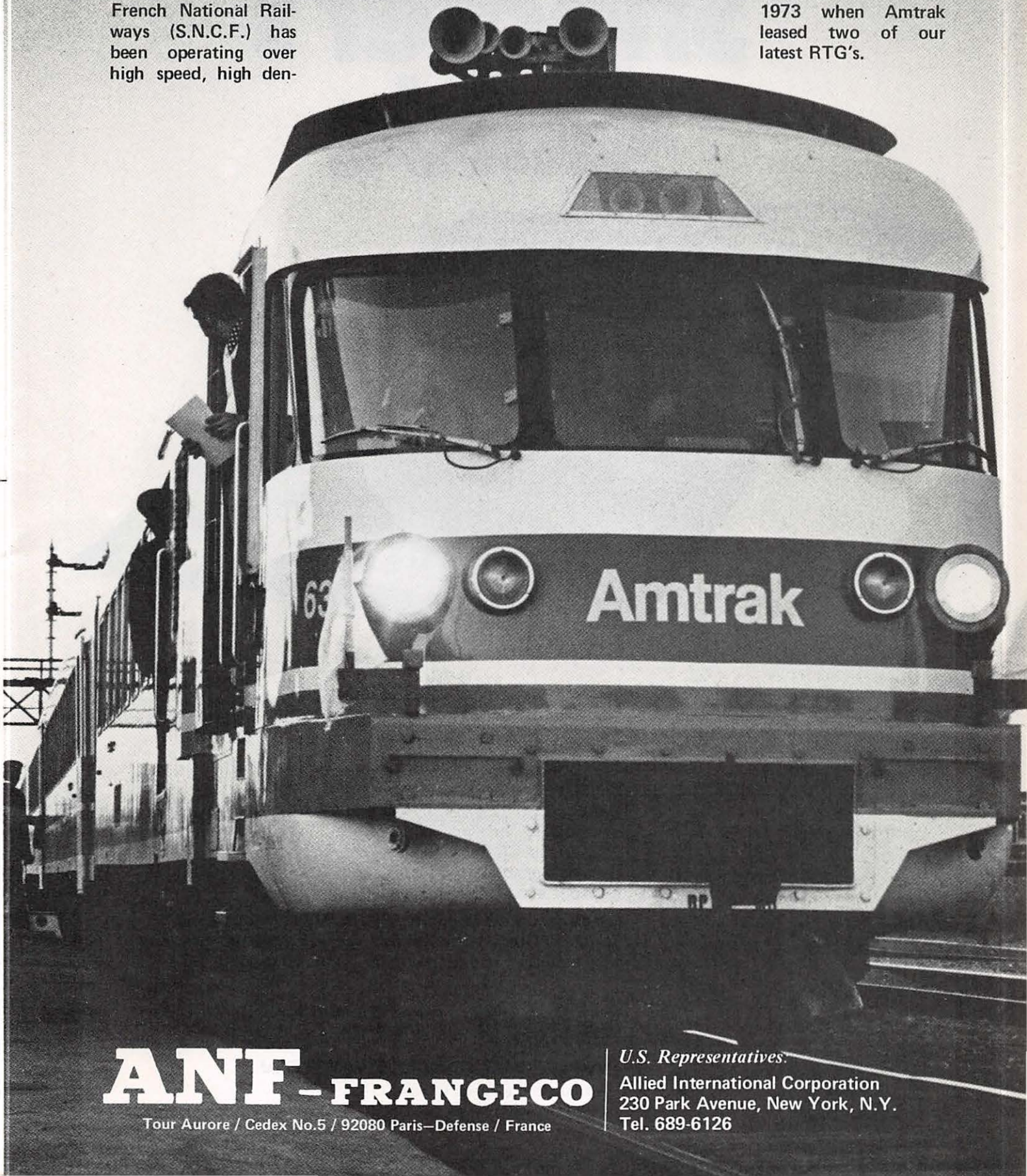

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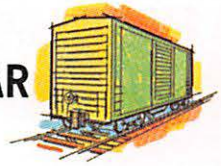
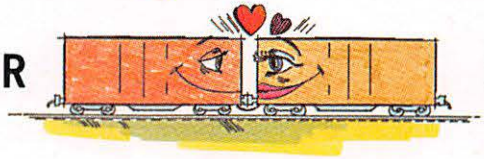
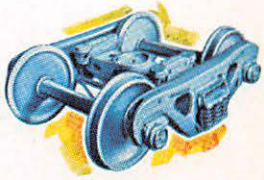
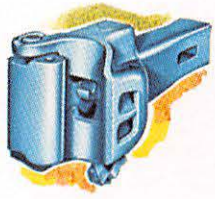
A FREIGHT CAR  HAS TWO 2 VITAL POINTS OF CONTACT

WITH THE REST OF THE WORLD, THE TRACKS AND

OTHER  CARS.

THESE POINTS OF CONTACT ARE MADE BY THE TRUCKS 

AND THE COUPLERS. 

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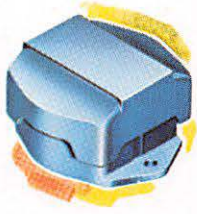

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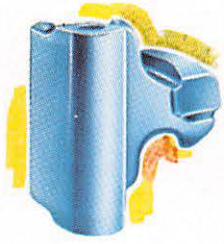

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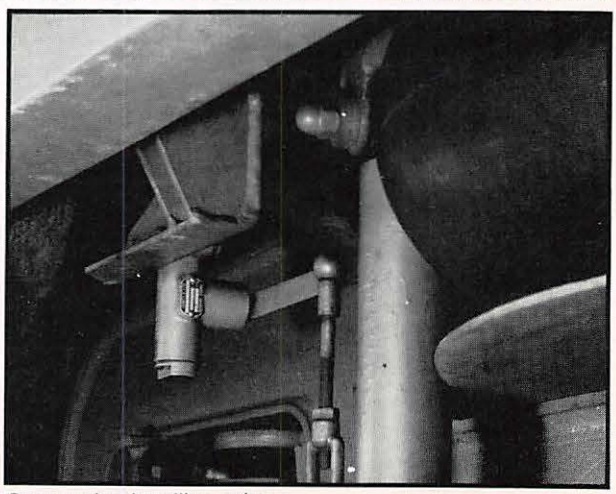

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Exclusive Interview with UMTA's Frank E. Herringer

Where DOT stands on rail transit

Have the "freeway freaks" (as one disgruntled rapid transit advocate recently described the opposition) finally seized control of policy-making within the U.S. Department of Transportation? Are DOT people really as biased against rail transit as some of their recent speeches would indicate?

The rail vs bus controversy, long simmering within the Department, has come to a boil. Railway Age Editor Luther Miller recently posed some candid questions on the subject to Frank E. Herringer, chief of DOT's Urban Mass Transportation Administration. Herringer had some equally candid answers.

Q. There has been considerable publicity in recent weeks to the effect that the Department of Transportation is "reneging" on its earlier promises to help big cities build rail transit systems. An Atlanta paper recently recalled that just a couple of years ago Secretary John A. Volpe was down there saying, "Uncle Sam will be here with cash on the barrel head when MARTA is ready for a ground-breaking." That paper went on to suggest that the Department now, under Secretary Claude S. Brinegar, is singing a less friendly tune. Now, what precisely is the DOT's current position on Atlanta?

A. I would still say that Uncle Sam will be there with cash on the barrel head when MARTA's ready for ground-breaking. We've already given them $66 million. The real controversy comes on the commitment question. Is DOT committed to pay 80% of whatever system Atlanta ends up with? Three years ago when the initial grants were considered, as late as 1972 even, Atlanta was talking about a $1.1-billion system and Federal grants of two-thirds. Now Atlanta's talking about a $1.8-billion system on an 80% ratio. So any commitment implicit or otherwise that Secretary Volpe could have made in 1972 would have to have been in the neighborhood of $800 million. Now Atlanta considers $1.4 or $1.5 billion to be the commitment.

Certainly, as Secretary Brinegar has pointed out, no commitment was ever made to Atlanta. All our grant letters have always been couched in the terms, "This is the grant, that's all we're committed to. Come back next year and get more." Now that's not a very satisfactory way to build a subway system. I recognize that completely and I appreciate Atlanta's problems. There are significant problems. But there is no commitment. Obviously, we're going to do everything we can to help Atlanta complete their system, but that priority has to be considered against all the other priorities.

"I think the controversy has been overdrawn as to fixed guideway vs other forms of transit....My own feeling is that there are 5, 6 or 7 cities that do not now have rail or fixed guideway that could probably justify it within the next decade...."

UMTA Administrator Herringer

Q. There were, of course, implicit promises made by your predecessor as UMTA administrator as well as by Secretary Volpe during the campaign that preceded the successful transit vote in Atlanta. Was that just campaign talk?

A. I don't know what Carlos Villarreal or Secretary Volpe said specifically during the campaign that preceded the election for the bond issue in Atlanta.

But in Los Angeles, the SCRTD [Southern California Rapid Transit District] brochure describing the initial system said that of course the Federal government would pay 80% of the cost.

Both Secretary Brinegar and I have taken great pains to point out that that assumption may not be warranted. I believe the message has been communicated. I wish that similar messages had been given as forcefully in Atlanta and in Baltimore. But that's past history. We must try to work from here and try to do what's fair to Atlanta and Baltimore, as well as what's fair from an over-all national taxpayer equity standpoint.

Atlanta has a request in to us this year for some $291 million; they're going to get substantially less than that when we finally divide up the money. The point I'd like to make is that the amount of money we will give them will not hold up their construction at all. In fact, both Atlanta and Baltimore have been very slow on committing the money that we gave them last year. We gave Atlanta a grant of $66 million last year and only $10 million of that has been committed to date. So they really don't need $291 million to continue their program. It's kind of like money in the bank. When we give them less I'm sure there are going to be screams of pain but in fact, from the point of view of progressing the program, it's not going to matter.

Q. Los Angeles has now scaled down its rapid transit proposal, perhaps partly in response to the DOT's position, and they appear now to be going initially for a 120 to 150 mile system. Have you any feeling about this scaled down system?

A. Not only was it scaled down but also it was phased over a longer time period and the first phase, as I recall, is about $2.3 billion, compared to the $8 billion total plan. We haven't had an opportunity to review it in detail. We don't have an application yet. But in general terms I've read the proposal and it's a much more reasonable, much more achievable proposal from our point of view than the original. I think they've done a good job.

Q. In a Transportation Week speech in Los Angeles, DOT Under Secretary John Barnum suggested that Los Angeles ranks about No. 21 on the DOT's list of candidates for fixed guideway transit, that being the area's ranking on the population density list. In your view, is population density a controlling factor?

A. No. It's not. Now we're looking at this very hard. I think the controversy has been overdrawn as to fixed guideway vs other forms of transit, and as to how many cities in our opinion should have fixed guideway. Somebody said

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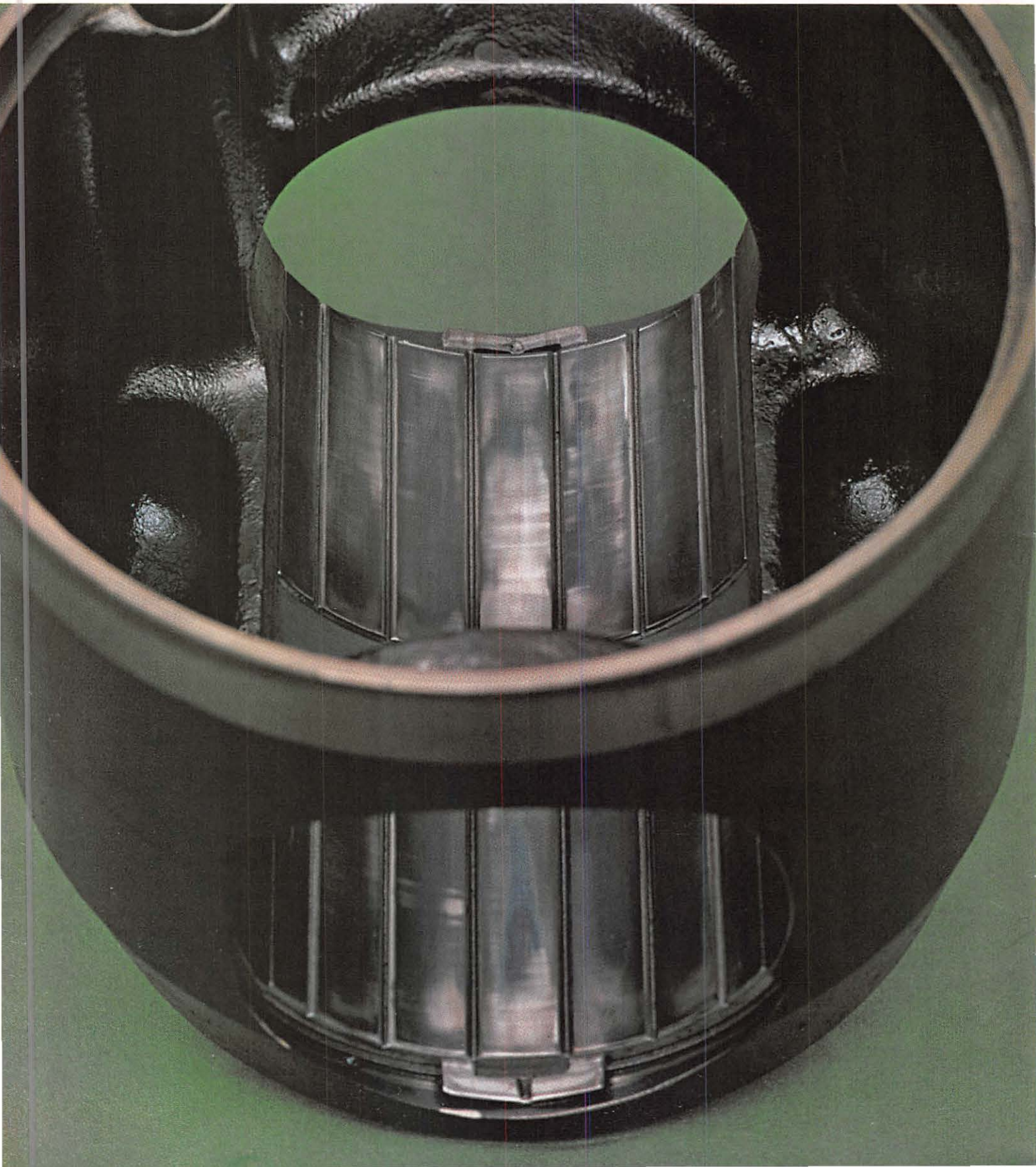

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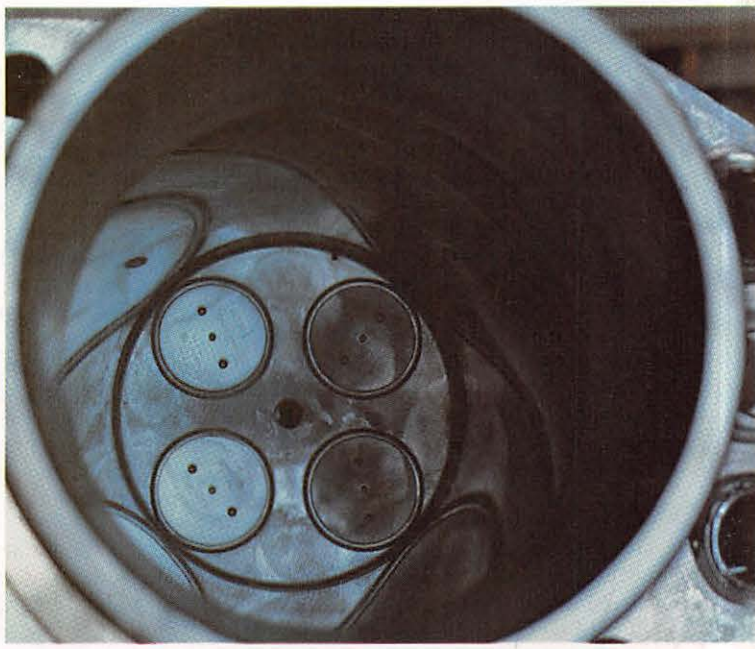
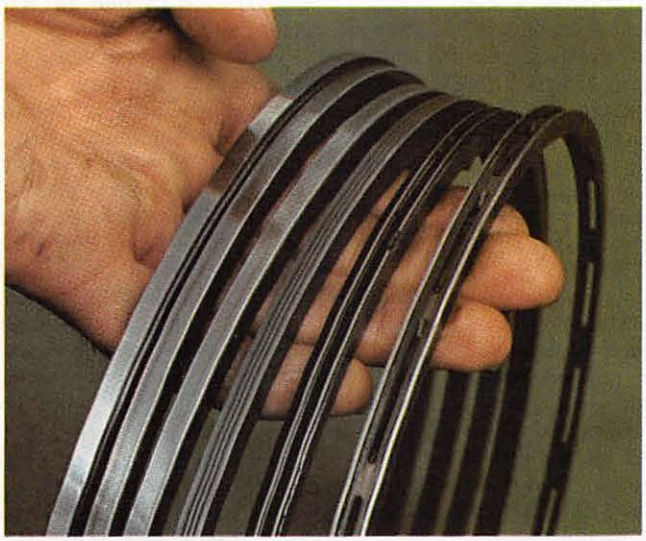


Note the absence of ash deposits on the cylinder liner and head from a GE U-36 that operated in excess of 100,000 miles on CAPRINUS T Oil 40.



Rings from an EMD SD-45 after 100,000 miles on CAPRINUS T Oil 40 show V-grooves clearly. Wear was low, and none of the rings was stuck. After 100,000 miles, rings on the GE U-36 also showed no scuffing or sticking and very low wear. Ring gaps were well within new parts tolerance.

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14; another said nine; somebody else said 16; still another will say 12. You have to watch it like the stock market: every day it goes up and down. Sometimes I ask myself what happens when we're down to four—are we going to have to take some out?

The Office of the Assistant Secretary for Policy and International Affairs sponsored a study that did different kinds of analysis on the rail/bus issue, and I had the Transportation Systems Center do some looking at metropolitan characteristics, rail vs bus, at least from a cost/benefit standpoint. What we found generally is that no simple set of metropolitan characteristics can forecast adequately, can discriminate enough between cities to judge whether one should have rail or should have bus. The only way you can decide whether you should have bus or rail in a given corridor is to go and study that particular corridor. What are the costs? What are the service characteristics?

Q. In announcing a grant of $36 million to Seattle a few days ago, Secretary Brinegar said that before a rail transit decision is made all the alternatives should be carefully studied. Now Seattle studied the alternatives and opted for a bus system. How about those cities which, after their careful studies, opt for fixed guideway? Los Angeles has, I believe, been studying the alternatives since 1925. Will DOT go along with them?

A. That is a difficult question. I can give you personal rather than official views, at this point, because it's an area we're looking at not only from the Department's point of view but also from that of the Office of Management and Budget and others—to decide how we're going to evaluate applications which come in.

Personally I feel that we should do everything we can to insure that the alternatives are fully analyzed, and that technology is not pre-selected. I do not feel that we at the Federal level should then mandate the selection of any particular alternative—I don't think we should tell Los Angeles, for example, "You must choose the most cost-effective alternative, or the environmentally beneficial alternative or the one that saves the most energy." That's their decision. Our role is to make sure that they do look at alternatives and that the alternatives are publicized, and that the local people when they vote on their bond issue know what the alternatives are. Then the question occurs: What do we do at the Federal level about funding?

I believe that it's difficult to use general taxpayer revenue to fund anything but the most cost effective alternatives in any given situation. Let's say, just for the sake of example, that Los Angeles opts for a 400-mile rail system and some other city studies the alternatives and decides to do something much smaller and much more cost effective. I don't think we can justify taking general taxpayer revenue to overbuild a system in Los Angeles and on the same formula fund a system at a reasonable level in another city. What I would see us doing is allowing a city to choose whatever alternative it wants but restrict the Federal funding to the level that would be represented by the most cost effective alternative. Now that's the area we're really in turmoil on.

Q. Mr. Brinegar has said, I believe, that probably "not more than a dozen" U.S. cities need rail rapid transit, which would be six more such systems then we have now. Have you drawn up your own list as to which cities would be included?

A. The Secretary and I and Governor Tiemann [Federal Highway Administrator] and Under Secretary Barnum make these speeches, or it comes up at a press conference, and you don't have time to fully develop a thought, so it's a form of shorthand, "no more than 12 cities." So what does that mean? What it really means, if you explode the thought and look at it from every angle, is that probably no more than three to five cities could justify heavy rail transit—$30 million to $100 million a mile transit—within a time frame of, let's say, ten years from now. We're not saying any more than that, and I don't think anyone can say any more than that, because who knows what kind of technology is going to come up? If the price drops from $30 million a mile to $5 million a mile, that changes the ballgame completely. Who knows what's going to happen after 1985 or 1980, for that matter? So it really should be a much more restrictive statement than, "Throughout time no one will ever build a fixed guideway system except for these 12 cities." My own feeling is that there are 5, 6 or 7 cities that do not now have rail or fixed guideway that could probably justify some fixed guideway in certain corridors within the city and start construction within the next decade. I'm not going to name the cities, obviously. But just based on our general knowledge of where the applications are, what the stages of planning are, that's my best guess.

Q. Would you care to speculate as to what percentage of Federal aid any city—whether they go for buses or fixed guideway—may expect to get in the future?

A. If I had my druthers, if I could do anything I wanted to do with the program and didn't have to worry about Congress, what I would do is cut the share back to 60%, maybe 65%, maybe go back to two thirds, and then fund every cost effective alternative up to that level. I'd first say, "You have to analyze the alternatives and come to us with an application; we will fund the most cost effective alternative at two thirds or 60%." I think that would be the simplest way to handle the allocation problems.

Q. Who decides which is more effective? You, ultimately?

A. We, ultimately. But I would hope that we don't get into the business of redoing the studies they've done. Obviously, regardless of the degree to which you refine cost effective analysis or cost beneficial analysis, there's going to be a lot of play in the numbers within, let's say, a 20% to 30% range, depending on how you value this or how you value that, what discount rates you use, what assumptions you use. And we can live with that. It's the 100% differences that I don't think we can live with.

Q. Have you had the opportunity to look at the 100 or so cities around the world which either have fixed guideway systems or are building or planning them—including such relatively small cities as Helsinki—and to find out why they are taking this route?

A. I went to Europe last summer and visited London and Paris and Bonn, Hamburg and Munich, looking both at the research and development activity at the Federal level in all three countries and also talking with the people who were running and planning the systems. Now I did not go to the smaller cities that are starting rail; I did not go with that in mind. I think if I went back, which I probably will, that's what I'd do. I'm interested in that phenomenon, too. I would like to know more about why cities of 200,000 and 300,000 are building fixed guideway systems. I do not on the face of it feel that that's an unreasonable thing for them to do. They might be building light rail, for example. Now that's something else. People tend to think that fixed guideway vs bus means Metro, like here in Washington—tunnels and heavy rail—vs buses but that's not necessarily the choice. There's a whole range of options ranging from busways to light rail vehicles to perhaps automated vehicles on a concrete guideway, like Skybus. There's

a whole range of options each with different costs and each with its service characteristics.

Q. What do you think of light rail as a pre-Metro concept?
A. I think it hasn't been sufficiently considered and sufficiently evaluated as an alternative in many situations. We haven't paid enough attention to it, I think, and I'm talking to our R&D people about it now. We're asking, what can we do at UMTA to investigate lowering the cost of fixed guideway construction? What can we do to bring light rail technology along to a point where it's competitive with other kinds of fixed guideway transportation?

Q. I understand that you are now in the process of granting about $600 million of the $872 million of capital money in your current fiscal year budget. Will all of this remaining money be committed by July 1?
A. Easily.

Q. Who's going to get it?
A. Obviously most of it is going to go to the rail cities. We're holding out to see what applications are real and what are not. At the end of the year there are always some that drop out for one reason or another. And since we do have more applications than we have dollars, we want to make sure that we have the best possible allocation. So we have the final grants in process now although we'll leave the dollar amounts blank right up until the last minute. I say the rail cities will get most, and it's true. But we've also had this year an impressive demand for buses. We've never seen anything like it before. I would guess between $300 million and $350 million of the program this year will go for buses.

Q. Is this in response to the energy crisis?
A. Yes, partly. But partly, too, it's just a reawakening of interest in transit in many medium sized cities that have bus systems and now, in response to the energy crisis and clean air and higher prices for gasoline or whatever, they're suddenly realizing they need more buses than they have.

So we have no trouble committing the $872 million and I'm sure there are going to be some very disappointed people when we make our final announcements.

Q. What kind of budget will you have next year?
A. We've asked the House for $1.225 billion in capital and $1.350 billion over-all. I'm hopeful that we'll get that. Our hearings have gone pretty well; the Appropriations Committee has always looked favorably on our capital grant budget requests, though research has been cut consistently. Out of the total, we've asked for $75 million for RD&D.

Q. How about Morgantown: One, what do you think will happen there and, two, what do you hope will happen there?
A. I think that the University of West Virginia will accept the system and we will work out a compromise for serving that part of the student population that is not directly served by the PRT. I can't believe that when the system is up and running and the University sees that it does the job for which it was designed that they will not accept the system. I'm sure they will.

Q. There were reports that you were considering tearing up the guideway. . . .
A. The contract we have with the University, which dates from 1971, states that if the University doesn't want the system then we're obligated to restore the site to its initial condition. The only way to do that would be to go in with torches. At one point I said dynamite and that's caused everybody to talk about blowing it up; I'm now talking about acetylene torches. It seems less inflammatory. So we could have to go in and take it out. But I don't foresee that.

Q. What do you think of BART today?
A. We still think BART's a good system. I think BART will work out its problems. We have confidence in BART. I'm anxious for BART to work out its problems and get running under the Bay because it's really a drag on the whole industry until it does. They're receiving a great deal of criticism, in some cases unfair, because of the perceived problems of BART. It makes it difficult for us on the Hill, and it makes it difficult for the industry in trying to sell its program and we're in for some very heavy criticism. It's very easy for people to say, "Well, mass transit doesn't work. Look at BART." That's the extent of their argument, and you have to spend an hour refuting that. Of course, the people who criticize it are generally the people who haven't ridden it. Anybody who goes out there and rides it knows that this is truly the wave of the future, and when this system runs, and runs right, it's going to be far and away the best rapid transit system in the world.

Q. Are you pleased with the SOAC program so far? Has it been worthwhile?
A. I think it has. We were up in New York for the inaugural run and it worked just perfectly. To see these hardened New York reporters talking in glowing terms about the ride and the acceleration and the comfort of the car was a good experience for us all. It proves the worth of the program, and if the revenue service tests work well, I think we'll see some near-SOACs ordered by some of these cities. I think it's a very good program.

Q. Do you think it's important to try to standardize on a rapid transit car—a kind of PCC car?
A. No, I don't think it's important to standardize totally. If we could just narrow the range of options, we'd be making tremendous progress. I don't think it's necessary that all the properties get together and order exactly the same car.

Q. Are you concerned by the rising cost of cars?
A. Yes, I suppose I'm concerned, but all prices are going up, and the prices of the kind of materials that go into rapid transit cars are going up perhaps faster than others. I would much prefer to see prices go up than see unrealistic bids resulting in companies going out of business; so I view this rise in prices with mixed emotions. We've been hearing for the past several years of companies losing tremendous quantities of money and trying to explain to their stockholders why they lost all this money on a rail car bid. If it keeps up, no one is going to be left in the business. I think the rising prices are partially a reflection of realistic bids. ■

Boeing's State-of-the-Art Car: The

By FRED HOUSER
Mechanical Editor

From manufacture to marketplace has not been an easy course for SOAC. But today UMTA's two State-of-the-Art Cars are operating on New York's Eighth Avenue subway line with paying customers in them. It has been three years since the Urban Mass Transportation Administration contracted with Boeing-Vertol for systems management of a project intended initially to demonstrate the best of currently available, off-the-shelf technology as a step in a program that would produce even more sophisticated rapid-transit vehicles.

● **Curtain raiser for ACT-1.** Already Boeing has awarded an $8-million subcontract to Garrett AiResearch for a pair of ACT-1 (Advanced Concept Train) cars. These, an UMTA spokesman once observed, are "a no-holds-barred opportunity to produce the better 'mousetrap,' constrained only by transit property requirements for a 600-volt DC source, standard track gauge, and a 'clearance envelope' combining the physical constraints of all five systems where revenue tests are to be conducted."

● **Revenue testing.** ACT-1, like SOAC, will be making the rounds of standard-gauge transit properties in the U.S., after acceptance and performance testing at the DOT Test Center at Pueblo, Colo. SOAC, upon completion of its revenue operation on New York City Transit Authority's BMT/IND lines, will go to Boston (Cambridge-Quincy route); Philadelphia (Broad Street subway); Chicago (Skokie Swift) and Cleveland (Airport Line). The tests are in this order so the cars may finally be equipped with pantographs for operation on the Cleveland Transit System. While Boeing's project management has included appraisal of prototype vehicles on Bay Area Rapid Transit, BART's 5½-foot gauge makes it impossible for SOAC or ACT vehicles to be operated there.

SOAC suffered an eight-month setback after its acceptance and engineering testing had been completed at Pueblo, when it was involved in a collision on Aug. 11, 1973. The operator was killed and the front of one car crushed when the two-car train passed through an open switch and crashed into a gondola car and switching locomotive which were used to move the SOAC train to the third-rail-equipped UMTA loop. After repairs were completed in January 1974, the pair of SOACs were retested at Pueblo. The National Transportation Safety Board looked into the accident and DOT announced that more stringent control would be maintained over future test train operations. It was noted that SOAC's anti-climber devices worked perfectly and four persons in the second car at the time of the collision were unhurt.

● **Interchangeability.** Design of cars capable of operation on five U.S. transit systems produced vehicles with an overall length of 74 feet 8½ inches and a truck center distance of 54 feet. While the pair of stainless-steel carbodies are duplicates, there are two different interior configurations—a 64-seat version for longer-haul suburban-type service and a slightly more spartan 72-seat car with greater floor space for standees which is more typical of equipment for full-scale rapid-transit operation.

SOAC's multiple-unit controls do not make it possible, for instance, for the pair of cars to be operated in trains with NYCTA's regular subway cars. Consequently, the pair are now running only during off-peaks and weekends, sandwiched between regular trains on the Independent 6th and 8th Avenue Lines. Boeing has a representative on each car during all such revenue operations to check customer reaction, and to deter the vandalism which has become a hallmark of all other cars running on New York subways.

● **Vulnerability?** From early in the program, UMTA has conceded that the weakest feature of SOAC could be its vulnerability to damage and graffiti. The deeply upholstered seats of the commuter model, the floor carpeting and the flourishes of the industrial designer all could represent tempting targets.

An UMTA spokesman once noted that "since SOAC represents the current state-of-the-art, it is just as susceptible and resistant as the best available technology can make it. Why should we penalize the 99% of the riding public who are entitled to a pleasant environment at the expense of the 1% who cause trouble?"

Operation in New York's subway tunnels has confirmed what testing on Pueblo's desolate desert had predicted—that SOAC is a quiet vehicle. Interior noise levels show little increase with speed, run some 10 decibels below the requirements of SOAC specifications, and run as much as 30 decibels below existing cars at typical operating speeds in the 30 to 40 mph range.

On its introductory run in New York, a radio interview team had to have the conductor open a SOAC cab window to demonstrate to inured subway rider/radio listeners that SOAC was in fact moving through the tunnels.

NYCTA observers note that SOAC

A SOAC GOES IN BROOKLYN and after its New

big test begins in New York

York tests will be operated on four other U.S. transit systems as part of UMTA project.

has the carbody of the R-44 car along with the GSI truck and air suspension that is to be used on the upcoming R-46 order. "The R-46 car will be almost this quiet, except that the carpeting would help a bit more," said one Metropolitan Transportation Authority officer. "We don't have the capacity to clean carpets, only linoleum, at the NYCTA shops." MTA, which operates commuter railroads as well as NYCTA, does use carpet in its new non-smoker commuter cars and actually has eight R-44s so equipped in the subway.

The lightweight SOAC truck has a cast alloy-steel frame isolated from the axles by rubber-chevron primary springs which eliminate metal-to-metal contact between rail and carbody. The air-bellows secondary springing controls carbody leveling as well as further isolating rail-generated noise.

Each truck is fitted with two 175-hp DC traction motors driving through double-reduction helical gears and elastomeric couplings. This AiResearch propulsion system uses a solid-state chopper with thyristors to vary voltage between third rail and motors. After arrival in New York, it was found that the chopper system had to be adjusted to accommodate the wider swings encountered in third-rail voltage, as compared with the relatively stable supply on the transit loop at Pueblo.

The control system also utilizes the Garrett motors in dynamic braking for retardation, supplemented by pneumatic tread brakes capable of providing full emergency stops with electro-pneumatic control.

● **Watching closely.** At introductory ceremonies for SOAC, David L. Yunich, new chairman and chief executive officer of MTA, noted that his agency "will be watching the travelling public's reactions to SOAC closely and with great interest. We are eager to discover new ideas, concepts and features we can borrow from it for incorporation in the design of new rapid transit cars and suburban railroad equipment that will be purchased in the future in our area. We shall watch its performance and reliability for possible future use here."

Yunich continued: "We should also take this opportunity to note that SOAC is tangible evidence of the Federal government's interest and involvement in improving urban public transportation systems. At the state and local levels we are pleased to have the Federal government joining us in advancing research and development projects such as these cars and capital improvement projects such as building the Second Avenue subway and new rapid transit lines in Queens. We believe

CHAMBERS STREET STATION was end of SOAC's inaugural New York run. Railway Age photo by Maurice Mates

that money spent on improving public transportation—when spent on innovations such as SOAC and new subway lines for our larger and growing metropolitan areas—is among the wisest investments America can make in its future and that of its cities."

UMTA Administrator Frank C. Herringer pointed out that after the Pueblo collision it had been his decision to come up with the $500,000 needed to restore the damaged car and keep the SOAC project alive. This adds to UMTA's $3-million initial investment in its Rapid Rail Vehicles and Systems Program, originally a three-year $10.5-million project to produce transit cars as comfortable, reliable, safe and economical as possible. There were to be five phases of this program:

—Observation of the prototype car program of Bay Area Rapid Transit;

—Manage production of the SOAC demonstration cars;

—Manage the design competition for ACT-1 cars;

—Manage the ACT-2 component development program required to move from first-generation prototype ACT-1 cars to second-generation ACT-3 revenue cars;

—Plan the ACT-3 revenue demonstration.

Boeing-Vertol was chosen as systems manager for this project. UMTA partially funded the BART ten-car prototype program and Boeing was to identify the possible improvements for SOAC and goals for ACT as debugging proceeded on BART's Fremont line. BART cars were to serve as the baseline for definition of state-of-the-art technology and UMTA specifications called, in effect, for "BART, or better."

With a carbody like NYCTA, trucks like Port Authority Trans-Hudson and an interior like BART, the SOACs apparently have emulated BART's most noteworthy feature. However, some of the most recent BART cars failed to win acceptance after they developed problems with interior details—seating, specifically.

The delay after the Pueblo accident gave time for SOACs to be fitted with Standard Steel's Acousta Flex wheels, composite units with aluminum centers and steel tires separated by a layer of silicone rubber that muffles noise and vibration. The resultant wheel is as much as 300 pounds lighter than an all-steel wheel and the silicone has been shown effective in reducing curve-generated noise. The damaged SOAC was repaired at the Boeing-Vertol plant in Philadelphia.

● **AC systems.** All car auxiliaries are powered by alternating current supplied by a single-shaft 125-kw Garrett motor-alternator. Use of AC results in smaller motors, lower weight, improved reliability and lower costs. AC-powered systems include heating, ventilation and air conditioning, air compressor, equipment ventilation, battery charger and lights.

The pair of Safety 8-ton air-conditioning systems, independent of each other, are separately controlled by individual thermostats. Space occupied by the two units is less than that of a single DC-driven system. The HVAC (Heating, Ventilating and Air Conditioning) system can maintain a maximum interior temperature of 75 deg F over an outside temperature range of minus 15 to plus 105 deg. F.

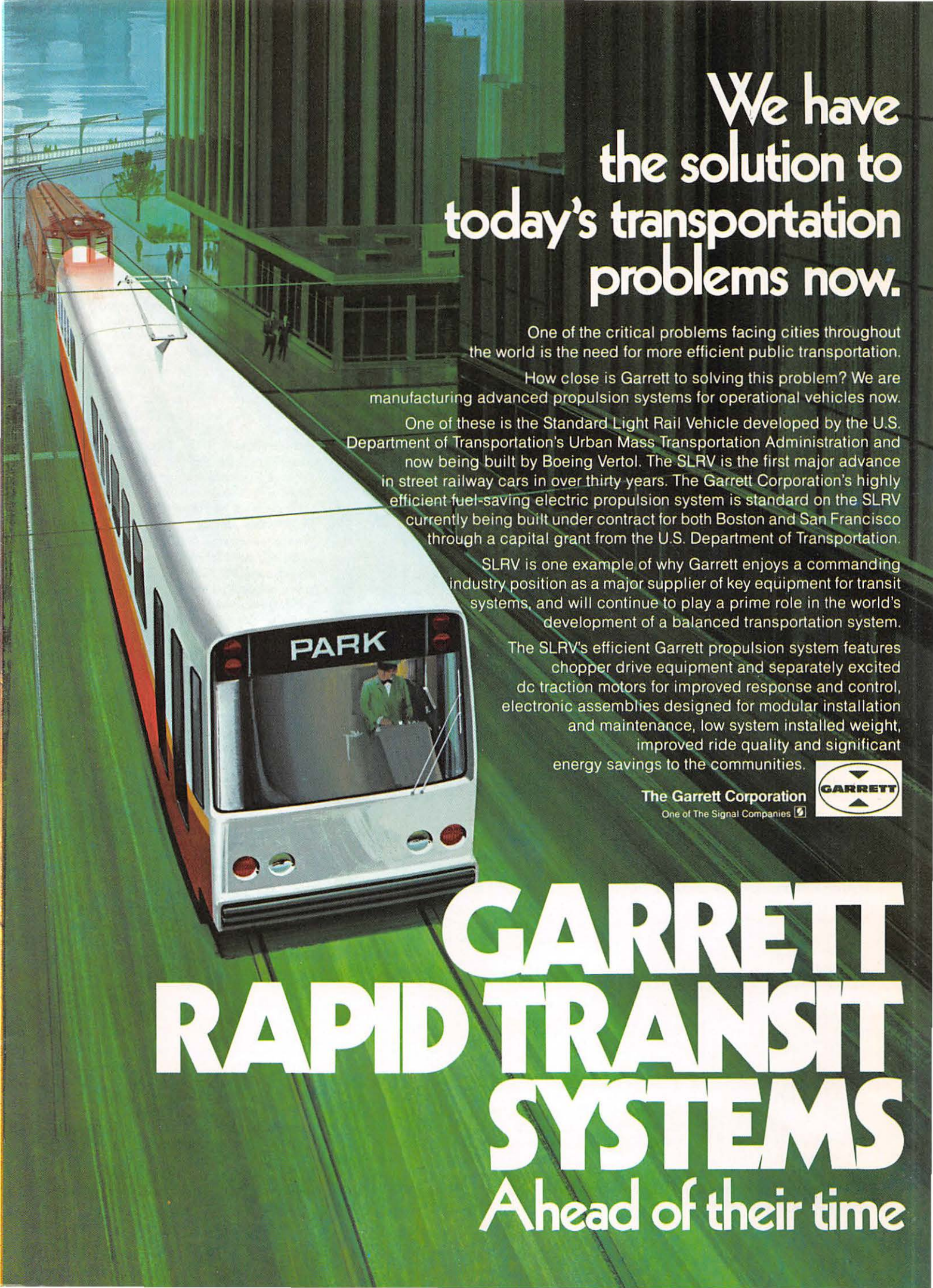
The recessed, overhead fluorescent lighting provides a high level of glare-free illumination for passengers. Windows are glazed with dual, laminated tempered safety glass tinted to protect against glare. Windshields are designed for high impact resistance.

Boeing has estimated that production runs of SOAC cars might see a unit cost of $350,000, but current inflation would soon make that figure obsolete.

NYCTA had contracted for $280,000 each for the 745 R-46 cars it is having built by Pullman-Standard. Again, inflation seems destined to take its toll.

The main thrust of SOAC, however, has been technological, rather than minimum first cost. "SOAC, is illustrative of what can be done right now to improve rapid transit, both from the viewpoint of the consumer and the operator," says Frank Herringer. "Future results from our urban rail systems R&D program should be even more impressive than this first step."

The first step was already paying dividends, irrespective of what might come of it in the future. Avowedly experimental, SOAC operations on NYCTA promptly revealed some problems that had to be identified, not only for assuring a successful ACT-1 project, but more immediately for trouble-free introduction of the R-46 production cars that are scheduled to begin coming on line later this year. The real-life environment of the E Train has also revealed track and third-rail configurations which UMTA probably will have to incorporate into the transit loop at Pueblo in order that it can mirror transit "guideway" like it really is. ■



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SLRV is one example of why Garrett enjoys a commanding industry position as a major supplier of key equipment for transit systems, and will continue to play a prime role in the world's development of a balanced transportation system.

The SLRV's efficient Garrett propulsion system features chopper drive equipment and separately excited dc traction motors for improved response and control, electronic assemblies designed for modular installation and maintenance, low system installed weight, improved ride quality and significant energy savings to the communities.

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GARRETT RAPID TRANSIT SYSTEMS

Ahead of their time

Los Angeles: Will tracks be back?

By TOM KIZZIA, Associate Editor

There is something about Los Angeles that draws thoughtful people westward to meditate on the doom of mankind. It is the automobile's natural habitat—5 million autos dwell in a three-county area—and wound into a ball are enough miles of freeways to roll, unfurled, past Salt Lake City: visions of individualism and "personal convenience" run amok. "What good is it that you can get anywhere in less than an hour," asks one writer, "when you *can't* get anywhere in less than half an hour?"

Troublesome as the reliance on fuel-consuming, fume-excreting autos has been, the region's voters have resisted changing course. Los Angeles is a Sargasso of rapid transit proposals; 19 plans have been proposed and abandoned since 1925.

● **Last chance?** A new plan is in the offing for Los Angeles, and Southern California Rapid Transit District (SCRTD) General Manager Jack Gilstrap says prospects are better than they have ever been—certainly better than six years ago, when the city narrowly voted down a transit plan. Two-thirds of the voters recently polled said they were ready to vote yes in November for a rapid transit system. And a point made repeatedly these days in local debate is that, with costs for fixed-guideway systems soaring, this may be the city's last chance.

Los Angeles County is gathering momentum for a referendum this fall on two half-cent sales taxes for transit improvements. In preparation SCRTD officials are trying to come up with a plan that strikes a delicate balance: They have to offer local voters a rapid transit system extensive enough to be politically popular, but not so large as to scare away Federal financial support.

Plan Number 19, a so-called building-block approach, was scrapped in mid-May. But this time the reasons were tactical, and it was followed immediately with a revised proposal. Plan Number 20, now pending final approval of the SCRTD board, calls for 120 to 150 miles of rapid transit, to be built as fast as Federal funding permits, and for the innovative use of exclusive busways. At last Gilstrap has a plan that he hopes will please everyone: the voters, the 78 cities in SCRTD's jurisdiction, the regional planning association, and the U.S. Department of Transportation.

The big hurdle between now and November is going to be DOT and its Urban Mass Transportation Administration. SCRTD will have to convince Secretary of Transportation Claude S. Brinegar—a former Los Angeles man who has been out-spokenly hostile to past proposals—that the proposed initial system, costing an estimated $6.9 billion, is worth the money. Under present Federal legislation, 80% of the capital cost of approved transit projects is supposed to be picked up in Washington, but Brinegar has told SCRTD there simply isn't enough money to give Los Angeles all it would need. The amount of Federal funding Los Angeles can get—and not any local master plan—will ultimately determine how much fixed guideway will be built. One danger, planners agree, would be spooking DOT by reaching for too much, too quickly.

Another danger would be in reaching for too little. SCRTD has to come up with a proposal that would seem likely to succeed in November.

● **Jurisdictional problems.** There are 78 cities within Los Angeles County, and internecine politics can sometimes resemble those of the Holy Roman Empire. Plan Number 19, a building-block approach whose immediate aim was to build a 121-mile system in increments, was shelved by the SCRTD board because the initial 33-mile increment would have provided transit for only a few cities. Planning consultants had recommended such a step-by-step approach hoping it would have been easier for DOT to swallow.

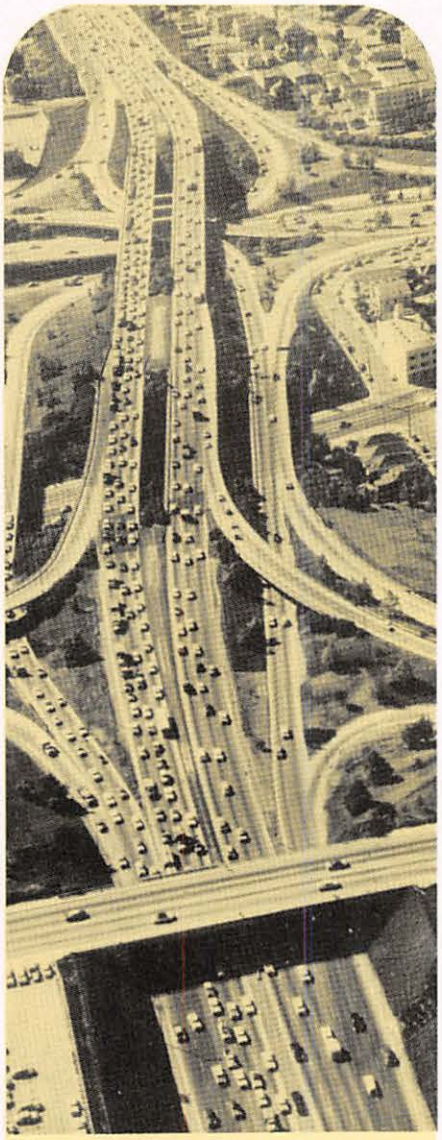
"I'm 50 years old," said one businessman who helped scuttle this approach. "With those priorities I would be long gone before rapid transit ever got out my way."

Local Republican Congressman Barry Goldwater, Jr., says, "You've got so many political jurisdictions, each looking out for its own. Unless they all get together, they'll never have a system."

The SCRTD staff is now recommending a plan of 120 route miles, to which the SCRTD board may add some 30 miles. No decision has been made on technology. Gilstrap emphasizes that all options remain open. The "fixed guideway" specified in the proposal could take the form of conventional rail; it could also be one of the more exotic systems such as magnetic levitation or tracked air-cushion.

Plan Number 20 will pass through a series of public hearings on its way to getting SCRTD board's approval June 21. Before UMTA receives the plan, it will go to a regional planning agency, the Southern California Association of Governments, who must decide by July if it is compatible with the master plan already approved for adjacent Orange County. One local observer commented: "They'll get approval the same way the interstate highway plan got approval: By including everybody and his brother in the plan."

Los Angeles planners have tried to refute the DOT supposition that a dense central city core is a prerequisite for a



Or will there be more of this?

DOT Under Secretary Barnum, an outspoken foe of rail transit, recently praised the "mobility" provided by Southern California's 600 miles of freeways and declared Los Angeles to be a "mecca" for those seeking transportation answers. All Angelenos don't agree; in a poll, two-thirds said they'd vote for rapid transit.

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SOAC, a rapid rail transit car representative of the best in currently available railcar technology, was designed by St. Louis Car for Boeing Vertol as systems manager for the Urban Mass Transportation Administration (UMTA). Garrett, as propulsion and braking subcontractor, is supplying an infinitely variable traction system, virtually complete dynamic braking capability, and electropneumatic analog friction brake control to provide significantly improved performance.

Garrett's high-performance ACT-1 was selected for prototype development by Boeing Vertol, systems manager for UMTA, as a result of a nationwide design competition to bring forth the next generation of rail transit cars. It has a low-profile aerodynamic exterior and Garrett's infinitely variable propulsion and braking control, including an advanced Garrett Energy Storage System. ACT-1 offers greatly improved performance, comfort, ride qualities, and reduced costs of ownership and operation.

SOAC and ACT-1: Just two ways Garrett is working to help transport people farther, faster, better.

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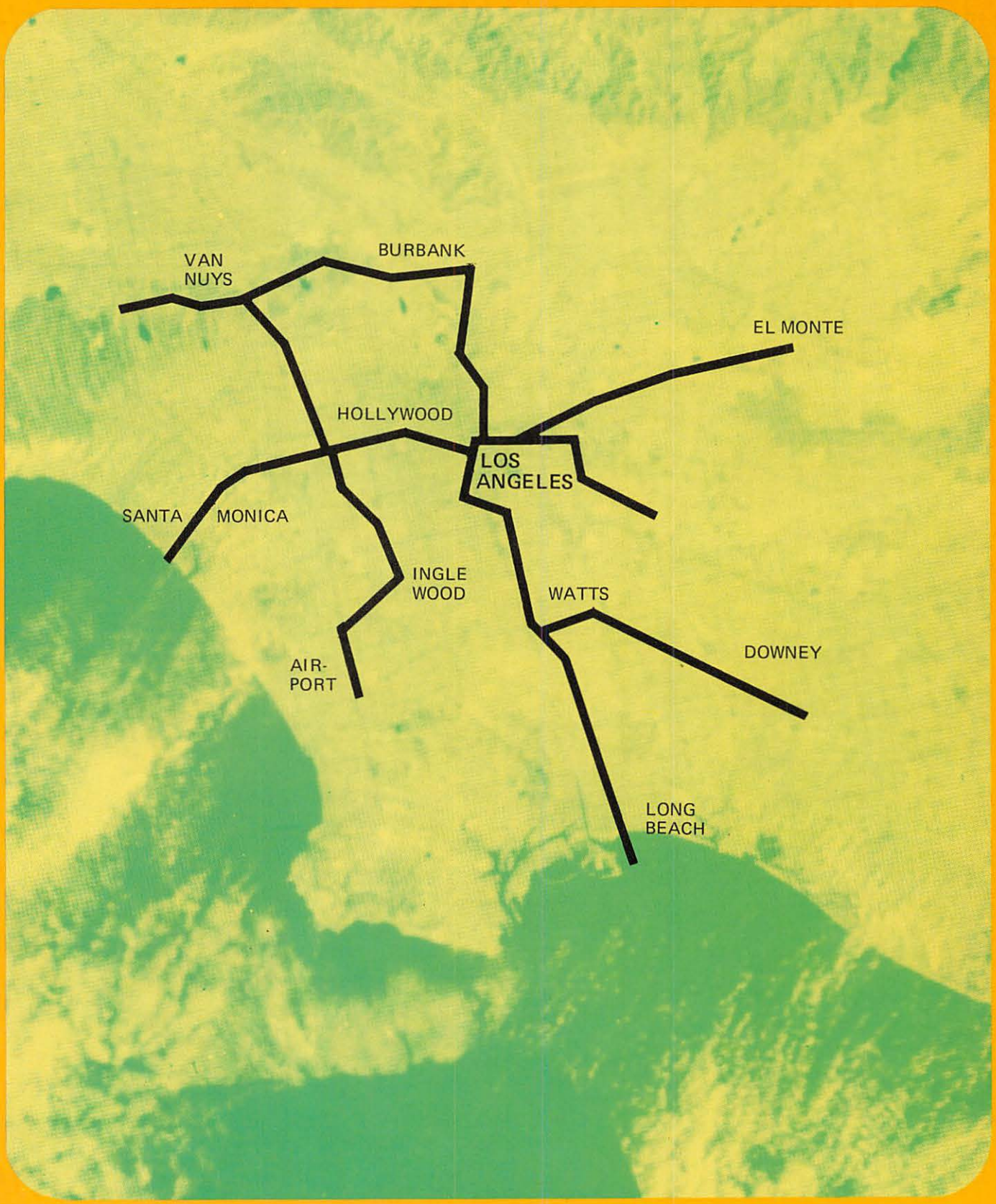
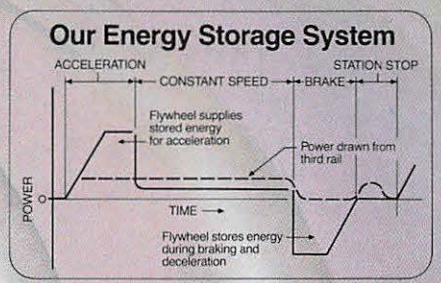


Garrett's Energy Storage System: Reclaims lost energy and puts it to work.

The Garrett Energy Storage System is a unique flywheel device that recovers and stores some of the energy normally wasted in braking a rapid transit car. The stored energy is transformed into useful electrical power to accelerate the vehicle as it leaves the station. There is sufficient power stored to enable the car to proceed to the next station in the event of line interruption.



The "Energy Pack" is now being tested on two New York City subway cars under a grant from the U.S. Department of Transportation's Urban Mass Transportation Administration. If installed on every car, it would cut vehicle electrical power consumption in the subway system by 30% – the equivalent of about 1,000,000 barrels of oil a year – so more cars can be added with no additional power requirement.

In addition to saving electrical energy, the Energy Pack can also significantly reduce subway tunnel heat, since much of the heat normally dissipated in braking is being converted to useful energy.

For any city now determining what kind of rail transit system to install, or about to upgrade an existing subway system, Garrett's Energy Storage System is an important development to consider.

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Ahead of their time

Ultimate goal: a 220-mile fixed guideway

Photo

y system

Southern California tries to put rapid transit back on the map

Gertrude Stein once said of Los Angeles, "There is no there there," and that characterizes the transportation problems of that unhinged city. The crucial part of Los Angeles' new strategy for solving these problems is the rapid transit system mapped at the far left. At least part of the 120-mile system, costing some $6.9 billion, could be in operation by 1983 if local voters approve the plan in November—and if DOT agrees to ante up its share.

Before it gets to the voters, this plan must win approval by the board of the Southern California Rapid Transit District—which is likely to add a few more route miles to it—and by SCAG (Southern California Association of Governments), the regional planning agency. These hurdles passed, Los Angeles County in November will vote on two bond issues, each supported by a half-cent sales tax—one for the local share of the fixed-guideway system and one for bus improvements. A recent poll found 66% of the voters ready to vote for the rapid transit bond, and 58% for the bus bond (though only 14% were willing to go for the all-bus system touted by DOT). A simple majority is needed for each. Long-time observers of the local scene feel that voters have at last accepted the need for a rapid transit system, but are careful to point out that if it goes the other way in November this won't be the first time voters have been seized with stinginess at the last minute.

Planners continue to dream of, and in a remote way plan for, a 220-mile master system someday, shown on the second map. No cost or time estimates have been made. Going after a system this ambitious, planners fear, might spook DOT officials who have opposed past rail transit plans for the Los Angeles basin.

There has been no word yet from Washington on the new plan. While DOT concedes that there are perhaps half a dozen more cities which could justify the building of rapid transit systems within the next decade, it has not conceded that Los Angeles may be one of them.

One thing seems clear: If Los Angeles is ever to get a rapid transit system, this is the plan that will have to do the job of convincing DOT. Los Angeles has been trying to win local and/or Federal approval for various plans for nearly half a century, and SCRTD General Manager Jack Gilstrap warns: "Further delays would inevitably price any worthwhile program virtually out of existence."

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rapid transit system. One argument is that, though the city's core density is low, its regional density is equal to the Chicago area, ranking just behind New York and Philadelphia.

The claim is also made that a fixed guideway system will have the ability to draw riders to mass transit that bus travel doesn't have. The consultants listed other reasons why buses alone wouldn't serve Los Angeles' needs, including awkward entrance and exit to freeways, the difficulty of effecting a high volume of transfers between bus lines, and the need for a phenomenal number of buses—exclusive bus lanes will be helpful, but can only be carried so far.

"For example," said the consultants' report, "by 1990, in order to provide necessary distribution of passengers within downtown Los Angeles, there would be nearly three times as many buses on downtown streets with a regional all-bus rapid transit system as there are today. This might require major bus priority measures on practically every street and conversion of several streets to 'bus-only' operation."

Just what are the chances for a go-ahead vote in November? One sign that the voters are coming around is that, besides the two-thirds polled in February who said they would vote for a rapid transit system, three-quarters said they would use such a system once it was built. Nearly three-quarters also felt some combination of fixed guideway and buses would be necessary, and only 14% felt that buses alone could be the answer. While 66% said they would vote for the half-cent "rapid transit" tax, only 58% said they would vote for the half-cent tax for short-term bus improvements.

Another good sign for rapid transit advocates was the election last year of Thomas Bradley as Los Angeles mayor. Bradley had been the first candidate to take a stand during a mayoral campaign on the transit issue, vowing to break ground for a fixed rail system.

SCRTD will get a preliminary sense of this year's attitudes in June, when California voters face a constitutional amendment to divert gasoline money in the state highway fund to non-bus transit. SCRTD officials support the proposal, of course, though they point out there is no guarantee SCRTD will get any of that money. Still, SCRTD officials feel their chances are better now than they have ever been—this time they need only a simple majority, not the two-thirds they needed in 1968.

But Representative Goldwater recalls past optimism: "The greatest problem is still citizen apathy. If the energy crisis had remained critical, there would be no question in my mind that there would be an overwhelmingly favorable vote for the bond issue."

One reason for Goldwater's tempered optimism may be that weekend traffic on the local freeways doubled between March and April. There are still those who claim improved auto circulation in Los Angeles is all that is needed, though only a dogged 3% in the recent poll thought more freeways alone would do any good. Los Angeles' long-range freeway-building program is petering out only two-thirds finished, with various arms and legs running into stiffer resistance in the wealthier suburbs than they did when they plowed through the ghettos and barrios.

Nor is the so-called Highway Lobby the united front it once was. True, a leader in the local anti-rail forces is Fred Hartley, Union Oil president—and Brinegar's old boss, as SCRTD president Neusom wryly points out. Hartley helped lead the fight to beat the 1968 proposal.

But a leader on the other side is ARCO President Thornton Bradshaw.

"The vote looks like a tossup, but our chances are better than they were in 1968."

Congressman Barry Goldwater, Jr.

An old friend of Mayor Bradley, Bradshaw is head of the Citizens' Committee for Rapid Transit.

Goldwater told Railway Age: "Right now the November vote looks like a tossup. It's going to take a monumental effort, but I think our chances are better than they were back in 1968, because a better job of planning and selling the idea to the public has been done."

A big selling point has been the cost of delay. SCRTD's Gilstrap points out that 1968's 89-mile proposal would have cost $2.4 billion to build, while the present 120-mile-plus system would cost some $6.9 billion. If the voters had supported the first proposal in 1925, they could have gotten 298 miles of rail for $323 million.

SCRTD's transit planners don't expect a major act of apostasy from the region's drivers, but Gilstrap thinks they are ready to commit themselves, in mind if not in heart, to a non-auto transportation alternative. Social critic Lewis Mumford once observed that the sacrifices people are willing to make for the religion of the motorcar stand outside the realm of rational criticism. Apparently, what with the fuel shortage, the Environmental Protection Agency's threats of a local parking surcharge, and the ever-denser cloud of smog that gathers around the city like a collective conscience, these sacrifices have now become self-evident to a lot of Angelenos. Moreover, the look of the region is changing: Now that there is no longer room to expand sideways, skyscrapers are popping up in the city center, and the word "downtown" is no longer just a punchline for local comedians.

"I think this is the plan that's going to make it," says Gilstrap, rapping his knuckles on his desk.

But while the new plan looks as though it is going to be more of a hometown success than its predecessors, its reception in Washington is less certain. DOT howled last July after SCRTD proposed a 250-mile master plan and promised local voters the Federal government would pay for 80% of it. "We have no program that would guarantee that kind of money," Secretary Brinegar said at the time. "Nor would I recommend it. The taxes of the whole nation are involved. . . If you are planning a rapid transit system because you think the Federal government can finance it—don't do it."

Los Angeles Democratic Congressman Glenn Anderson, member of key House Public Works Committee, has called on DOT to do what it says it wants to do: support local decisions once they have been carefully made. "Let me emphasize the importance of local officials and their ideas on how to best solve their particular problems. Obviously, what is good for Los Angeles may not be the answer for Boston, and what the Secretary of Transportation advocates may be totally unacceptable to both. What we envision under [the Public Works Committee's new transit bill] is local initiative and local planning—working from the bottom up, not from the Secretary down; in effect, not permitting the Secretary to dictate the needs and the transit solutions to local officials."

According to SCRTD President Thomas G. Neusom, Los Angeles had gotten much more support from former Secretary of Transportation John Volpe and former UMTA Administrator Carlos Villarreal. "They told us to come up with a plan of real value. We did, but when we came back there was a new DOT and UMTA. Now there has been active agitation to defeat our proposal, even to the extent of Secretary Brinegar coming to Los Angeles to meet with businessmen and tell them our 250-mile proposal was unrealistic." In light of

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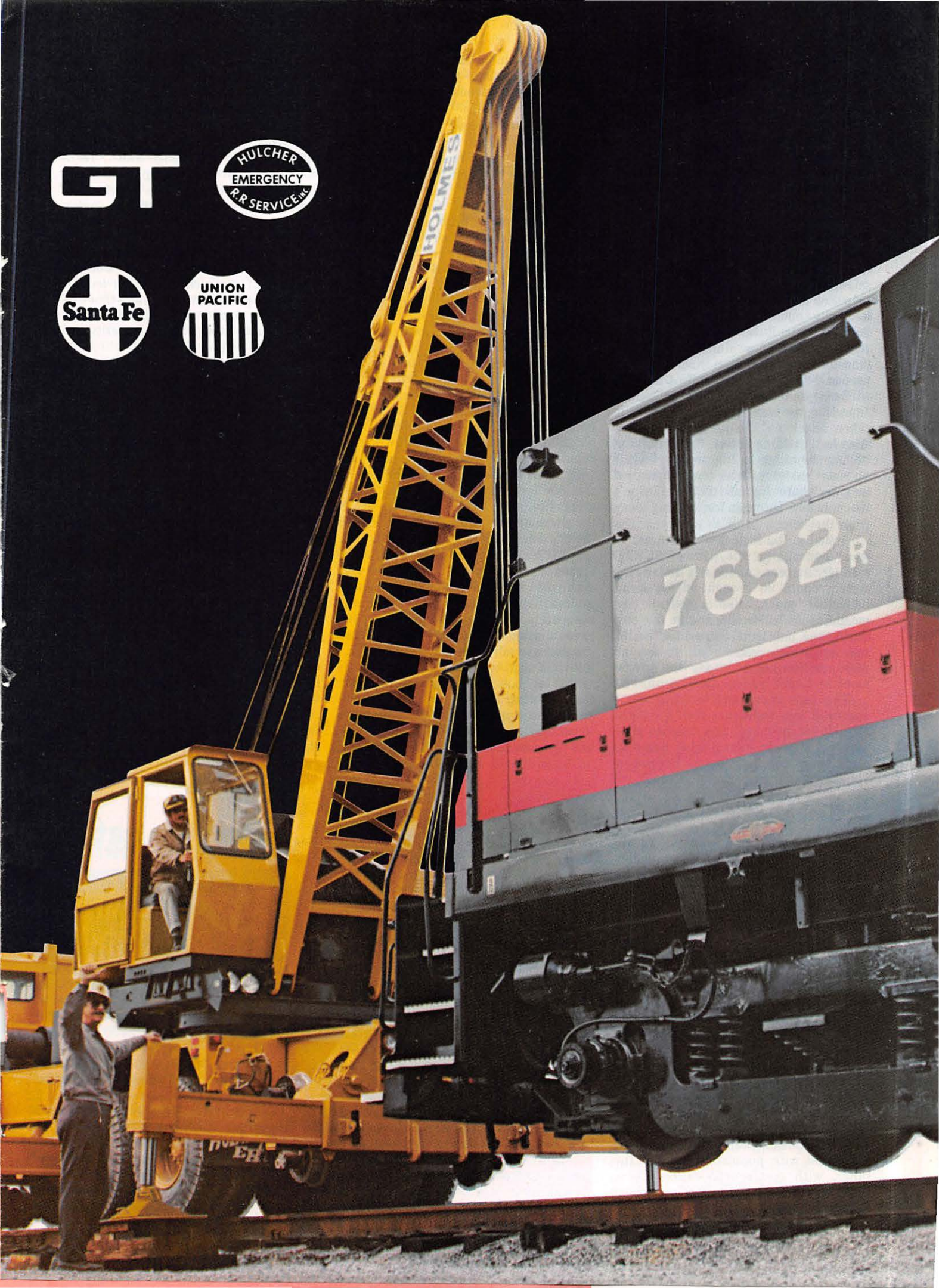

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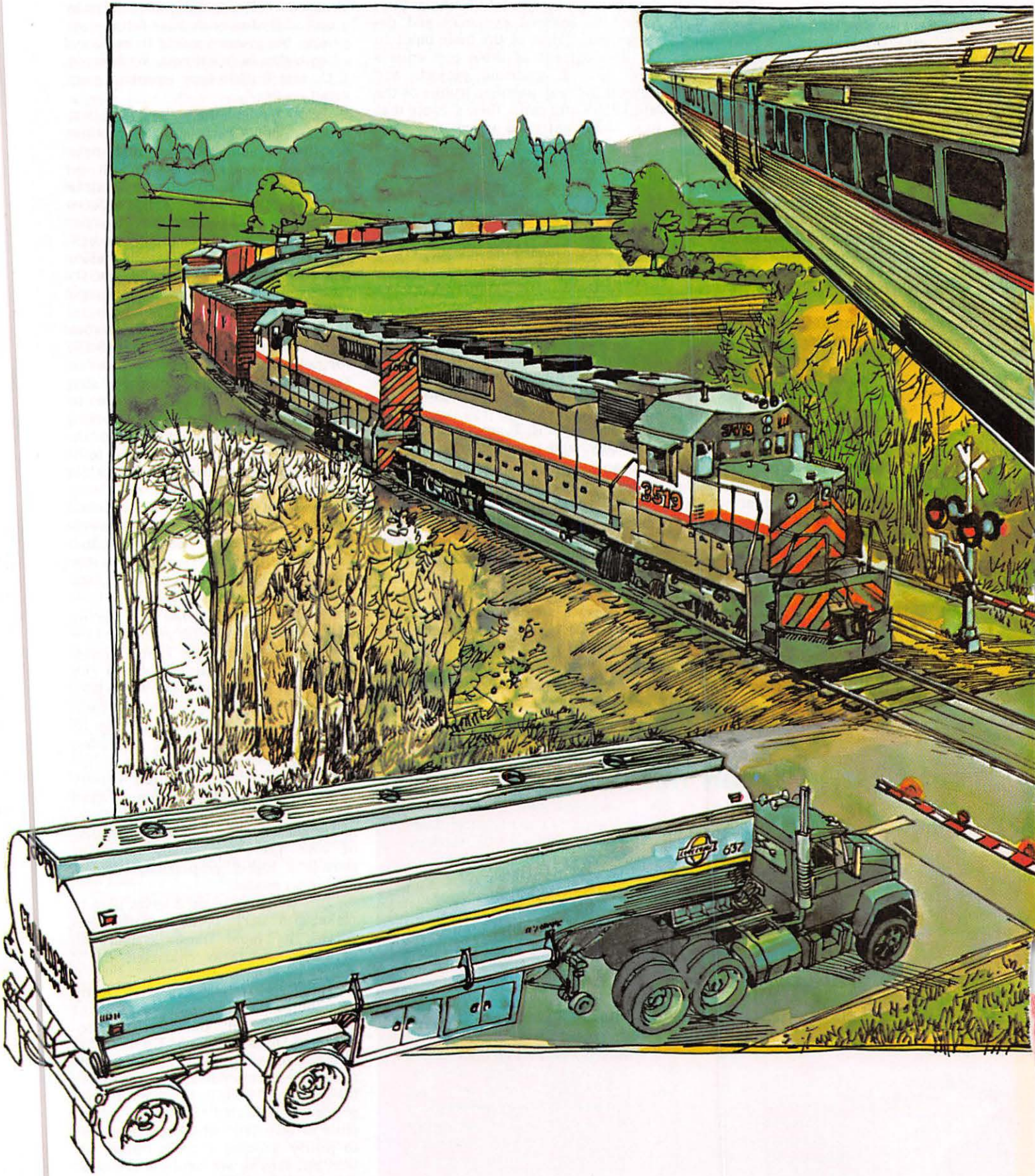

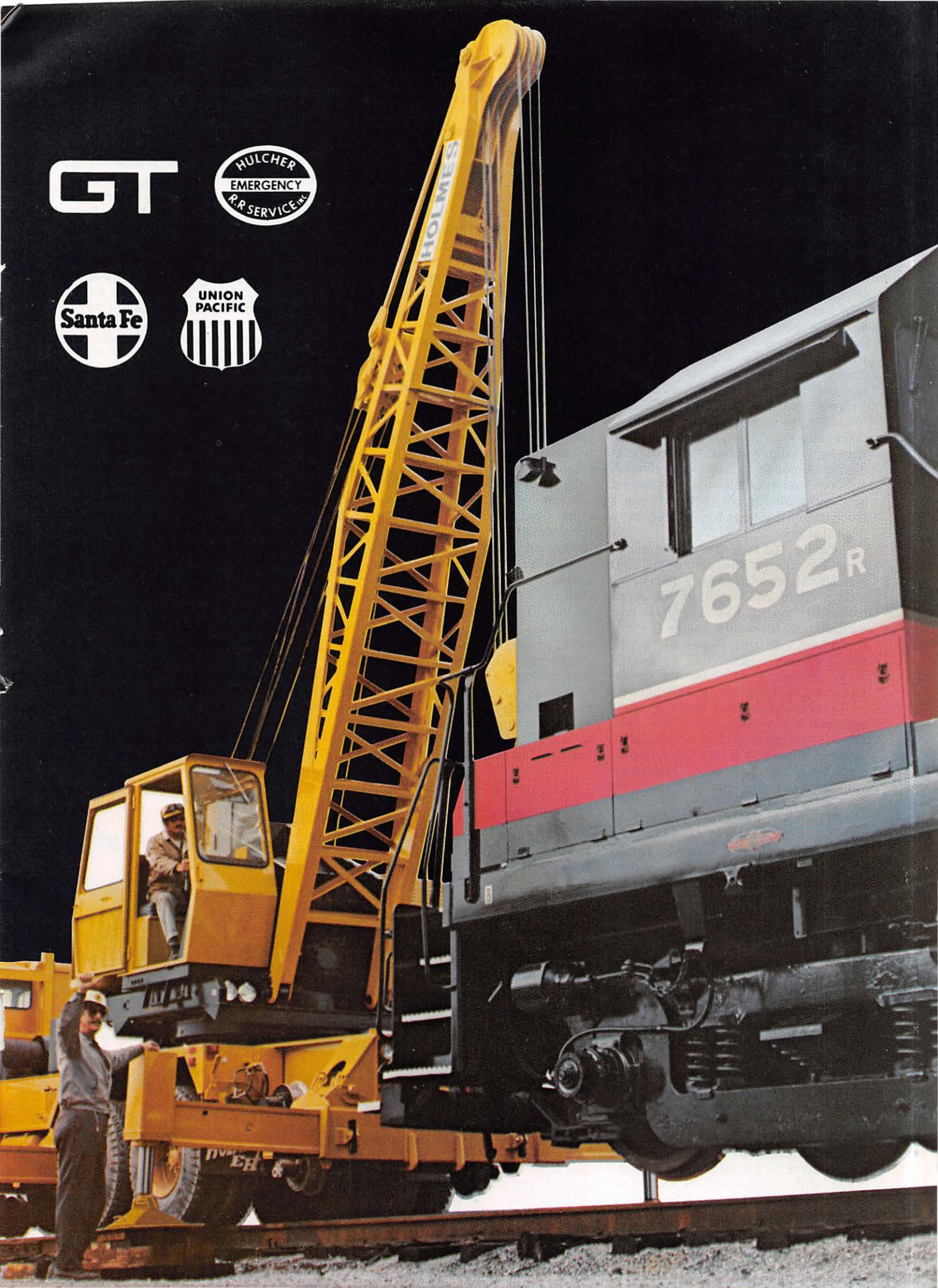
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this, some strategists propose an end run around the present DOT, going ahead with a limited plan in hopes of a friendlier Administration in 1976 (or whenever).

Los Angeles planners and DOT speech-makers may not really be as far apart as the rhetoric makes them appear to be. DOT officials, who have tried to discourage locals from embarking on the fixed-guideway route by telling Los Angeles (and other cities) that an 80% Federal contribution is out of the question, nonetheless have stopped short of saying that the Department will not help Los Angeles build whatever system it finally opts for. As DOT Secretary Brinegar put it in an interview with Railway Age a few months ago, if Los Angeles opts for rail it had better be prepared to pick up "most" of the tab.

Even some of SCRTD's staunchest friends in the transit industry are a little taken aback by the dollar figures Los Angeles is talking about. "Seven billion dollars is enough to frighten anybody," says one easterner who has campaigned long and hard for rail transit. "I don't much blame Brinegar for backing away from that one."

Actually, the high figure is an act of fiscal honesty on the part of SCRTD planners: in terms of today's dollars, the system could be brought in for about half that much. But a 9-10% cost escalation factor would double the cost during the construction period. (BART was originally costed out at around $800 million; as of today the investment in BART is close to $1.6 billion.)

The now-abandoned building block approach was fashioned with this DOT skittishness in mind. Los Angeles planners based their incremental stages of rapid transit on anticipated Federal involvement ranging from a high of 60-70% to a low of 5-10%.

UMTA Administrator Frank Herringer says he was glad to see, in the building-block plan, a scaled-down approach. "It's a much more reasonable, much more achievable proposal from our point of view than the original master plan," Herringer told Railway Age (page 21). "I think they've done a good job."

The most recent plan is more ambitious in its timing than the building-block approach, but it was the even more ambitious master plan that brought Secretary Brinegar scurrying home to lecture his old neighbors on frugality.

So Los Angeles is waiting to see whether the new, middle-sized plan will go over in Washington. In the past DOT has expressed two major objections to a fixed guideway solution for Los Angeles' transportation problems. One has to do with population density; the other, with cost/benefit ratios. These objections reflect both DOT's national stance on expensive capital projects, and the Nixon Administration's business-like approach to policy decisions, awarding overriding importance to economic criteria.

● **Density is destiny?** Under-Secretary of Transportation John W. Barnum made DOT's most recent sally to the Coast, where the first thing he did was praise Los Angeles' freeway system. "Little wonder that when transportation encounters problems," he told the Los Angeles Chamber of Commerce, "we look to this city—and its transportation industry—for answers."

Local transit planners were willing to shrug off Barnum's opening remarks, in case he was reading the wrong speech by mistake. They were concerned, however, when he went on to warn the businessmen, "Since population density is a basic yardstick in justifying rail transit investments, and since Los Angeles ranks 21st among U.S. cities in population density, I would suggest you weigh the alternatives carefully before committing vast resources to an area-wide rapid rail system." The problem is, said one local sadly when he heard that, every time Los Angeles tries to weigh the alternatives it finds DOT's thumb on the bus side of the scale.

UMTA's Herringer is less firmly committed to the notion that "density is destiny." "No simple set of metropolitan characteristics can forecast adequately, or discriminate enough, between cities to judge whether one should have rail or should have bus," he told Railway Age (page 21).

As for cost/benefit ratios, Barnum makes it clear that he has already done his own arithmetic on a problem which so many find complex and elusive. He told the Los Angeles businessmen that a good bus system and traffic management are "the best and most cost-effective tools a city can employ to deal with its transportation problems."

Part of the reason he feels this way is that over the years he doesn't expect driver attitudes to change much. Technology will have to be adapted to man's habits, not necessarily his needs. "We cannot say with any authority today whether these changes will involve new fuel sources, new engines, new materials, or new additives—perhaps any or all of these in combination—but we know from experience that our technical ingenuity seldom fails us in times of need. I am confident we will find ways to continue to enjoy the benefits the private vehicle provides."

Herringer says the criteria for making cost-effectiveness judgments are being worked out within DOT. (DOT seems to be relying heavily on a report released by the Institute for Defense Analyses in October 1973. The IDA report pitted rail transit against bus transit in a harsh economic light, finding that while time costs to users of the two modes were close, the capital cost was higher for rail, and concluding that "total trip costs are approximately twice as great for rail as for bus." At the time it was released, the report's conclusions so pleased the Federal Highway Administration that it printed up extra copies to distribute on its own.)

Herringer explains: "I believe it's difficult to use general taxpayer revenue to fund anything but the most cost-effective alternatives in any given situation.

"What I would see us doing is allowing a city to choose whatever alternative it wants but restrict Federal funding to

Once upon a time, L.A. had the nation's

"Results of tests conducted by two independent laboratories indicate no carbon monoxide or unsaturated hydrocarbons in the exhaust of diesel-operated buses. These noxious irritants are not present in automotive diesel fuel, which is clear as water."

So read one paragraph of an eight-page pamphlet circulated by Metropolitan Coach Lines shortly after it took over Pacific Electric Railway passenger operations in the Los Angeles area on Oct. 1, 1953. MCL wanted out of the six remaining rail operations which it had inherited, especially the interurban lines between Los Angeles, Long Beach and San Pedro. Those lines departed from PE's off-street terminal in downtown Los Angeles and operated most of the way on double-track, block-signalled private right-of-way. But MCL's pamphlet labeled them "street cars" in

WATTS "STREET CARS" were replaced by buses using fuel "clear as water." Scene is mid-1945. (Photo by Doris Cope)

announcing the plan to substitute buses as part of a $15-million modernization program.

Those half-dozen rail lines were a vestige of what had been the nation's greatest interurban network, linking Los Angeles with its suburbs and neighboring communities, much as the freeways do today. One line extended east all the way to San Bernardino, 58 miles, and

the level that would be represented by the most cost-effective alternative."

The transit industry has its answers to DOT's arguments.

"Had we waited for density to materialize before building our rapid transit system in New York, where would we be?" asks Dr. William J. Ronan, who headed up the New York Metropolitan Transportation Authority until moving last month to the chairmanship of the New York-New Jersey Port Authority. He recently told a House subcommittee, "The development of New York City, or of Boston, or to take a more recent example, of Toronto, reflects a planning decision to proceed with urban public transportation investment in order to shape development. The shapeless development of Los Angeles and many other cities of the automotive age, and of typical American suburbia, reflects a different set of decisions, or non-decisions, for which I fear we will soon be paying the price as energy resources remain scarce and movement in suburbia becomes increasingly difficult."

Transit industry officials argue that more than cost-effectiveness must be taken into account before a decision can be made. "Environmental and developmental considerations were clearly the basis for the San Francisco area's decisions to proceed—without any prospect at that time for Federal assistance—on the development of the BART system," says Ronan. "Costs, densities and the like must enter into the decision, particularly as the Federal Government assumes an increasingly important role in financing. But I am certain that many public transit projects now successfully in operation, including those in New York City, could not have met the initial thresholds some now set forth as minimal for rail transit."

Ronan cautioned the Transportation Subcommittee of the House Appropriations Committee on the use of "mechanistic cost/benefit formulas" unrelated to regional dynamics and development. "Most of the basic input to the development of these cost criteria grew out of academic projects and regional highway planning studies of the late 1950's and early 1960's. Since that time, this country has undergone a great awakening as to the impact of automobile dependency on the shape of urban development, on environmental conditions and energy consumption. All of these factors must be properly reflected, not just criteria of density, cost and the like, in making national urban transit planning decisions."

Even by its own standards the cost/benefit analysis is vulnerable.

E.L. Tennyson, Deputy Secretary for Local and Area Transportation for the Pennsylvania DOT, attacks what he considers to be wrongheaded transportation studies with their own weapons: facts and figures.

A major point Tennyson has made repeatedly, and one ignored by DOT's IDA report which found buses so much more cost-effective than rail—an omission for which he takes its authors to task—is elasticity. Drawing from his own Philadelphia experience, Tennyson says, "The Lindenwold rail line generates 75% more rides per capita in its corridor than Shirley Highway buses do in theirs. Other studies found rail rapid transit generates 50% more rides per capita than bus service. Suburban rail commuter service has not noticeably declined per mile of route since World War II, but suburban bus service has lost 75% of its riders."

"IDA assumes rail technology has a much higher initial investment cost than comparable bus systems," says Tennyson. "This is not true. Studies by qualified professionals have found comparable bus systems would be equal and often higher in initial cost. Washington, D.C., and Buffalo have reports in some detail on this."

In IDA calculations, Tennyson complains, "Subway costs of $30 million per mile are mixed with surface right-of-way-only costs of $4 million per mile. Since exclusive busway capital [with which the rail capital was unfavorably compared] was based on open right-of-way, a rail line could be built the same way. So only the $4 million per mile costs are comparable for the IDA exercise. This reduces rail rapid transit cost by 80%."

The IDA report found that full costs for a 13-mile commuter trip were $2.97 for rail transit, and $1.40 for buses on an exclusive busway. Recalculating those costs by what he feels are the criteria useful to those actually working in the transit field, Tennyson finds the corrected cost, for a 14-mile trip, to be $1.60 for rail transit, and $1.75 for busway.

Tennyson bristled when he found that the American Public Works Association had decided, in March 1973, that the population density required to support a rail rapid transit system was 14,000 to 20,000 per sq. mile.

"Population density has little bearing on this question. For 50 years, the City of Shaker Heights Rapid Transit System operated without subsidy from a city with total population of only 35,000, covering several square miles. The Delaware River Port Authority operates its new (Lindenwold) line at a modest operating profit in an area of low (4,000 per square mile) population density where bus service had previously been incurring huge operating losses. Commuter rail service seldom serves densities of over 4,000 per square mile, yet attracts a higher proportion of riders than other modes."

This is a point Los Angeles likes to make with DOT; because of the local sprawl, its rapid transit system will naturally have many characteristics of commuter lines in other cities.

The local consensus is that clearly something must be done—even most DOT people will concede that. Congressman Anderson says Brinegar has told him privately, "Los Angeles has the most severe transportation problem in the country." Both Brinegar and Herringer have indicated there are a few cities—a very few—which might be able to justify building a rapid transit system, but they're not telling which ones. Los Angeles would sure like to know if it is on their list. ■

greatest interurban network

on to Redlands, 67 miles. PE's Citrus Belt Limited made the San Bernardino run in an hour and 45 minutes.

On the other end of the scale, PE operated a tourist route from downtown LA to Alpine Tavern atop Mount Lowe, described as "America's Most Scenic Trolley Trip." But it was the network of city and surburban lines that provided a really meaningful service—the lines to Watts, Long Beach, San Pedro, Whittier, Pomona, Santa Monica, Pasadena, Hollywood and communities up the San Fernando valley. In the 1920s PE operated 1,115 track miles and 7,200 trains were dispatched each weekday. Boasted PE in a 1923 timetable: "It may be truly said that one may place his finger upon the map of Southern California almost any place, and a line of the Pacific Electric Railway is not far distant; almost any time, and a train of that company will be along in a few minutes." PE claimed that its lines represented an investment of approximately $75 million.

By the end of World War I, however, PE's route structure was essentially complete and subsequent population growth in the Los Angeles basin tended to be remote from PE tracks. Then as business migrated from the downtown area (Central Business District was a demographic term yet to be invented), automobile usage spiralled upward.

For all the growth, for all the exodus from downtown, and for all the changes wrought by the automobile and the freeway network, you can super-impose a map of principal PE lines of the 1920s over a map of SCRTD's proposed initial system to the same scale, and you will have a striking congruity.

—R.G. Lewis

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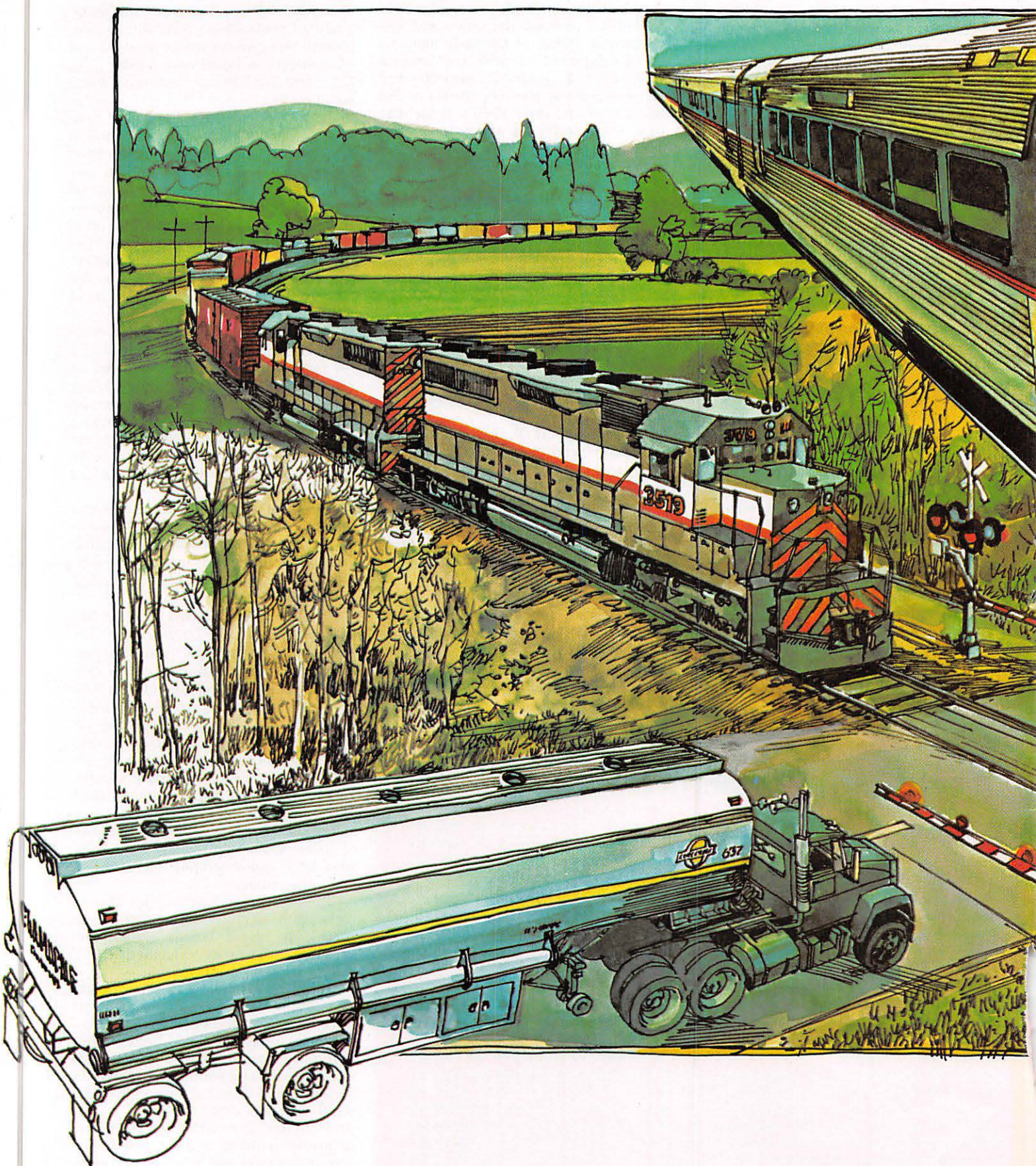

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Labor relations is key item on Supers' agenda

It's not often that you find railroad men quoting papal encyclicals—but there it is, from "The Condition of Labor," by Pope Leo XIII in 1939, and it says, among other things: "Capital cannot do without labor, nor labor without capital. Mutual agreement results in pleasantness and good order; perpetual conflict necessarily produces confusion and outrage."

That's a particularly appropriate way to open a report to the American Association of Railroad Superintendents—because the "condition of labor" and the improvement of management/employee relations will be very much up for discussion at the 1974 meeting of AARS which begins June 11 in New Orleans. The report itself was put together by a group headed by Frank J. Edzwald, vice president-labor relations and personnel of Boston & Maine.

● **Change—and compliance.** It's obvious, Edzwald's committee notes, that "changes are being made by many railroads. To those, we point out that it takes considerable time, perhaps years, to establish good employee relations by fair and equitable treatment throughout a large company—but that such policy can literally be destroyed in minutes by impetuous or stupid handling of one or two critical situations. Therefore, top management should concentrate on and insist upon each supervisor's complete compliance with company policy and his constant exercise of effective leadership and good employee relations."

Where is the key to properly managing the human element and to improving employee relations? "The answer must be in the first and second level of supervision. The rank-and-file employee doesn't really relate to the president, vice presidents, general managers or even, in most instances, superintendents. Employees do, however, associate the company with their division-level, on-the-ground supervisors. The supervisor is the only one they see every day. He is the one who tells them what to do as well as what not to do. His actions are translated by the employee as those of 'the company.' The supervisor's interest in and understanding of his employees, his day-to-day treatment of his employees, his complete awareness that his employees are human beings and as such have differences as individuals—all these are major factors. . .in improving employee relations. It's been said before and we say it again: There is no substitute for the line supervisor being close to his people."

● **Why problems?** Edzwald's group traces the trends in employee relations, in employee morale, over a number of years—starting with a survey done for Railway Age by Opinion Research Corp. in 1945 and continuing through later assessments made by AARS itself. And the trend shows deterioration. As for the causes of that deterioration, the report observes that employee relations "seem to have been a victim of events—and changing times—as much as anything else. We don't downplay the effects of the work-rules campaign which began in 1959 and lasted for so many years; no doubt the 'featherbedding' accusations flying back and forth had a severe impact. But this has also been an industry in trouble—losing markets, losing share-of-market, facing government-aided competition, experiencing steady declines in employment, facing tremendous pressures on the cost-cutting side."

In looking at trends, too, the committee finds that in recent years labor's emphasis has been as much on working conditions and job security as on wages and benefits per se: "True, notices have included stiff economic demands, but when union leaders have had something to say publicly about the industry, often as not it's had to do with the employer/employee relationship. They've challenged management on such things as discipline, harassment, winking at rules violations and then lowering the boom when something goes wrong, trying to stretch agreements. It's significant, too, that labor's leaders now seem to believe that top management wants to improve relationships. Labor, however, obviously doesn't believe that this desire runs very deep on quite a number of roads."

"We say it again: There is no substitute for the line supervisor being close to his people."

As one for-instance, the AARS committee on employee relations quotes United Transportation Union President Al H. Chesser: Top management's attitude is generally good, but middle management has a battle on its hands in trying to apply top management cooperative attitudes "and still live with a completely irresponsible set of lower management or first-level supervision that seem to want to do as they please and get away with as much as they can until complaints that filter down from the top eventually catch up with them. This is our most serious problem and unless it is checked very promptly it has the potential of completely destroying all of the good that has been accomplished in our joint efforts in improving employee relationships."

As a second for-instance, Edzwald's group quotes the retiring president of the Brotherhood of Locomotive Engineers, C.J. Coughlin: "In contrast to the expressed willingness of the top echelon in railroad management to improve working relations with their employee representatives, it is regrettable that this has not flowed down through the lower rank of carrier officers. In fact, among the lesser official family, we find an extreme reluctance to cooperate."

● **"Not received—or ignored."** As Edzwald's committee sums it up, chiefs of the operating unions "along with other union chiefs are emphatic in their belief that middle and lower management have not gotten the message from the top or, if it has been received, it is being ignored. The union chiefs appear to be unanimous in pointing to middle and lower management as the key to additional improvement of employee relations, and they are unhappy with the actions of those levels of management to date."

In trying to assess employee attitudes today as compared with attitudes a quarter-century ago, the AARS report bounces results of the 1945 Railway Age industry-wide survey off results of recent opinion surveys made on several roads, notably Union Pacific and Frisco. These are the conclusions:

—Most employees still like railroad work and plan on making it a career.

—Pay and benefits represent no particular problem and, in fact, attitudes in this area have "significantly improved."

—Employees have a continuing desire to be provided with better tools and equipment with which to do their jobs.

—While "communications" seemed to be little or no problem in 1945, now it shows up as an area where there are substantial gripes. In one of the recent surveys, most employees felt that improvements "must be made in communications between employees and their supervisors," and less than half of those surveyed seemed satisfied with the job the company does of keeping them informed.

—Despite problems cited by union leaders at lower levels of management, one of the individual-road surveys showed that most employees regard their immediate superior as well-trained and "generally fair." At the same time, the employees also think supervisors should give greater recognition for jobs well done and should more strongly encourage employees to come forward with ideas. ■

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REFURBISHED YUCATAN 4-4-0, built by Baldwin 58 years ago, is star performer on Disney World's WDW Railroad.

FORT WILDERNESS RAILWAY is more fitting to the environment than more modern transport.

Disney World railroads:

Functional first, fun secondarily

You won't find the WDW in the Official Guide or the Pocket List. There are no WDW reporting marks in the Equipment Register, and the road is not a member of the Short Line Association. But WDW may well be second only to Amtrak in the number of passengers carried—if you exclude commuter roads. WDW stands for Walt Disney World. The railroad operates steam passenger service only, using four oil-burning locomotives and 20 open passenger cars. It operates a "subsidiary" line, the Fort Wilderness Railroad, which is also a steam-operated all-passenger road.

There is a plethora of tourist railroads around the country. But there is one distinctive difference between those and the Disney World lines. Walt Disney World lines serve a functional purpose. They are important adjuncts to the successful operation of the enterprise, transporting employees as well as visitors over considerable areas which are, by design, devoid of automobile or truck traffic during park hours. The happy fact that they are also attractive to visitors is actually secondary.

Disney World attracts visitors on a scale comparable to a World's Fair or a major sports event, but does it seven days a week, 52 weeks a year. Efficient transportation is essential. The primary attraction, the Magic Kingdom, is across a broad lake from the nearest highway access and may be reached only by monorail or ferry. The WDW railroad operates from the Magic Kingdom monorail station and ferry landing to and from areas inside the Kingdom, such as Frontierland. Probably 90% of Disney World visitors ride the line at least once. Perhaps attesting to its functional nature, adult passengers substantially outnumber the moppets.

Motive power for the line consists of four Baldwin steam locomotives acquired from the United Railways of Yucatan where they were in regular service until the Mexican line was dieselized in the 1960's. They are 3-ft gauge. Three are 4-6-0's built in the mid-1920's. The oldest is a 4-4-0 built in 1916. All were rebuilt at the Tampa Shipyards before going into Disney World service. Each pulls a train of five open bench cars built by Tampa Shipyards under Disney supervisors. The cars are patterned after the old "Narraganset"-type street cars. Each train seats 300. Four trains are in continuous operation at peak periods. The rebuilt steamers operate so quietly and with so little smoke than many visitors believe they are actually diesels in steam locomotive shrouding.

Track is 40-lb rail laid on crushed rock ballast. The extent of mechanization is a couple of Atlas Copco hand tampers and Templeton Kenly track jacks. Track is maintained to good gauge and level. Seaboard Coast Line's engineering department may be called in from time to time when a track problem develops.

Disney World's second railroad is the Fort Wilderness line, only 2½-ft gauge, but 3.5 miles long. This line serves the Disney World campground resort, running from the gateway parking lot in a big oval through the recreation area. The line has seven stations. All are strategically located to bring the trains close to all trailer parking areas, parking facilities, and the landing for a Magic Kingdom boat service.

The decision to build a railway was based on studies which indicated that a railway would be the most practical way to move people through the area with the least adverse affect on the tranquility and ecology of the wilderness in which it is sited.

The four locomotives servicing this line are identical 2-4-2 saddle tank engines built new by Mapo Locomotive Works, part of the Walt Disney enterprise, in California. Mapo (for Mary Poppins) also built the 20 closed two-axle passenger cars.

None of the personnel are former railroad men (or women—The Fort Wilderness line has female engineers). Most are youngsters. They do a great job with genuine enthusiasm, and are mindful that safety is the first consideration in their daily assignments.

Gene Carr, transportation maintenance manager, has perhaps the most anachronistic combination of responsibilities of anyone in the transportation business. He manages the busy monorail operation as well as the steam railways. Railway equipment is maintained on the ground floor of a modern shop which, on the upper level, houses the fleet of monorail trains.

Asked what he feels is the future of monorail, Carr will say only that "I'd rather maintain the monorail equipment than those steam engines." But he admits that the old timers furnish a reliable and highly acceptable transportation service for Disney World's millions of visitors with few breakdowns or service interruptions. ■

People in the News

ERIE LACKAWANNA.—Gregory W. Maxwell, president and chief executive officer, Cleveland, has assumed direct responsibility for the operations of the railway. **Richard H. Hahn,** vice president-finance, appointed to the newly created position of vice president-finance and administration, with additional responsibilities for real estate and purchasing.

John H. O'Neill, vice president-real estate; **Curtis F. Bayer,** vice president-purchases and stores; **Thomas E. McGinnis,** manager of transportation, and **Dr. William E. Mishler,** chief surgeon, have retired.

FRISCO.—N.A. Kirchoff, assistant vice president-industrial development, named vice president-industrial development. **H.H. Knuth,** assistant vice president and general sales manager, appointed vice president-sales. **R.J. Rodefeld,** assistant vice president and general manager-rates, named vice president-pricing. **D.E. Egertson,** director traffic development-planning, becomes assistant vice president-market development. All will have headquarters in St. Louis.

MILWAUKEE.—Warren H. Ploeger, western counsel, named to the newly created position of vice president-executive department, Seattle, to succeed **Byron E. Lutterman,** vice president and western counsel, who retired May 1 after more than 33 years' service. **James E. Nelson,** general attorney, Seattle, succeeds Mr. Ploeger.

MILWAUKEE MOTOR TRANSPORTATION CO.—Robert F. Munsell elected vice president. He was formerly general attorney, **Milwaukee.**

N.A. Kirchoff
Frisco

H.H. Knuth
Frisco

R.J. Rodefeld
Frisco

D.E. Egertson
Frisco

Warren H. Ploeger
Milwaukee

Robert F. Munsell
Milwaukee Motor Tr.

James E. Norris
P-S

Wm. Van Der Sluys
P-S

SUPPLIERS

Pullman-Standard Division of **Pullman Incorporated** has set up two operational units—rail freight equipment and rail passenger equipment. **James E. Norris,** vice president, operations, has been named vice president and general manager-freight. **William Van Der Sluys,** vice president, transit marketing, has been appointed vice president and general manager-passenger. **James C. Pontious** has been appointed assistant general manager-passenger. Mr. Pontious was formerly assistant to the president of the division, Washington, D.C.

Joseph G. Stark has been promoted to general sales manager, East, **W.H. Miner Division, Miner Enterprises, Inc. Richard H. Stinnett** has been promoted to general sales manager, West. **Robert H. Back** has been appointed director of purchasing, Manufacturing Department.

The **Federal Sign & Signal Corp.,** Chicago, has appointed the general managers of its three operating divisions as presidents of their respective divisions. They are **Ray F. Greving,** Signal Division; **Richard L. Tannehill,** Western-Cullen Division; and **William W. Anthony, Jr.,** sign division.

William B. Browder vice president, has been elected a senior vice president, **Trans Union Corp.,** Chicago.

Blake A. Bergen has been appointed editor, North American Passenger Travel edition, **Official Railway Guide,** published by the **National Railway Publication Co.** The first issue will appear in July as a companion to the freight service edition of the Official Railway Guide, which was introduced in January.

Norman E. Bateson has been appointed assistant to the president, **Pullman Transport Leasing Co.,** Chicago. He was formerly director of physical distribution, **Pullman Incorporated.**

Phillip B. Rogers has been named to the newly created position of manager of marketing administration, **Pullman Transport Leasing Co.,** a subsidiary of **Pullman Incorporated.** Mr. Rogers, formerly assistant to the lease manager, Cleveland branch of Pullman's **Trailmobile Division,** will have headquarters in Chicago.

John L. Wagner, manager of production control, **Electro-Motive Division** of **General Motors,** has been promoted to director of production control and purchasing. **Richard P. Hodgson,** manager of sales engineering, has been advanced to district manager, Central Region, to succeed **George C. Mulick,** promoted to regional manager (RA, Mar. 11, p. 48). Mr. Hodgson's successor is **William J. Garibaldi,** sales engineer-railroad, who in turn is succeeded by **Gregory B. Morman,** sales engineer-power products. **Austin F. Murphy,** manager-rebuild sales, has been promoted to the newly created position of manager-rebuild operations. **Steve A. Ivey,** manager-reseller sales, succeeds Mr. Murphy.

James M. Richardson has joined **Railway Maintenance Corp.** as general manager-sales, Pittsburgh. Mr. Richardson previously was railroad sales manager, **Stratoflex, Inc.,** Fort Worth, Tex.

John B. Morton has been elected president, **Morton Manufacturing Co.,** Libertyville, Ill. **Henry J. Ehard** has been elected secretary and treasurer.

Laurence P. Prange has been appointed controller of leasing operations, **United States Railway Equipment Co.** He was previously assistant controller.

Harris-Intertype Corp. on May 15 officially changed its name to **Harris Corp.** The change was made because the company has expanded beyond its original base in printing equipment into electronic communications, integrated circuits and data handling systems.

Raymond R. Wingard, assistant vice president and division manager of railroad sales, Forest Products Division, **Koppers Co.,** Pittsburgh, has been named manager of marketing for the division. **Robert K. Wagner,** marketing manager, has been appointed manager, Pressure-Treated Products Group.

David L. Greinke has been named purchasing manager, **Alco Spring Industries, Inc.**

Walter H. Staats, vice president-manufacturing, **Westinghouse Air Brake Division, WABCO,** has been appointed assistant general manager, Pittsburgh.

Paul H. Vesey, director of operations and maintenance, **Intermodal Transportation Systems,** Hoboken, N.J., has been appointed vice president operations and maintenance.

Robert P. Rice has been appointed president, **Allied Services Division,** Chemical Group, **Allied Equities Corp.,** Milpitas, Cal. Mr. Rice was formerly vice president of sales, **R.H. Bogle Co.**

S. Graham Hamilton has been appointed general manager, Locomotive Products Department, Transportation Systems Business Division, **General Electric Co.,** Erie, Pa., succeeding **Olaf F. Vea,** who retired April 1. Mr. Hamilton formerly managed the GE International diesel-electric and electric locomtive business from Erie. **Carl J. Schlemmer** has been appointed general manager of a new International Locomotive & Mining Industries Products Department. Since 1972 Mr. Schlemmer has been general manager, Off-Highway Vehicle Products Department. **John C. Dwyer** has been named general manager, Transportation Industries sales department. Mr. Dwyer has been Northeastern regional sales manager, Transportation Systems Business Division since 1971. **Victor J. Louden** has been named general manager of a newly established Transit Equipment Products Department. Mr. Louden was formerly manager, engineering and technology operation, Transportation Systems Business Division. **Norman W. Seip** has been appointed manager of a newly established Customer Relations Operation.

J.B. Rogers has been named vice president-marketing, **Touchstone Railway Supply & Manufacturing Co.** of Jackson, Tenn. From offices at 800 Okmulgee Street, Muskogee, Oka., Mr. Rogers will direct a national marketing group with representatives throughout the United States and Canada.

Philip D. Lively has been appointed plant manager, Marine and Rail Equipment Division, **FMC Corp.,** Portland, Oregon. Mr. Lively was formerly works manager, FMC's Ordnance Plant at San Jose, Cal.

Daniel W. Hollingsworth has been appointed railroad vegetation control specialist, **Velsicol Chemical Corp.,** in the southeastern United States, at Atlanta, Ga. He was formerly industrial weed specialist, Roberts Co. of California.

P.E. DeWitt has joined the marketing group of **Touchstone Railway Supply & Mfg. Co.** He was formerly assistant manager, Mechanical Department, **Illinois Central Gulf.**

Donald E. Telge, formerly with **Velsicol Chemical Corp.,** has joined **HABCO, Inc.** as manager of operations, Kansas City, Mo. **John A. Forderhase** has been appointed assistant vice president, general sales manager, HABCO, Kansas City.

Victor Brinkman has been appointed group manufacturing manager-New England operations, **Okonite Co.,** with responsibility for plants located in Phillipsdale and Ashton, R.I., and Worchester, Mass. **Joseph P. Wenski** has been appointed sales representative, San Francisco district, succeeding **Ronald W. Dearwater,** named manager, Denver district. **Frank D. Rimkus** has been appointed sales representative, Detroit district.

Okonite's Atlanta district sales office has moved to 1260 Winchester Parkway, Suite 125, Smyrna, Ga. 30080. **Eugene O. Chapman** is district manager and **J. Malcolm Hartley,** sales representative, there.

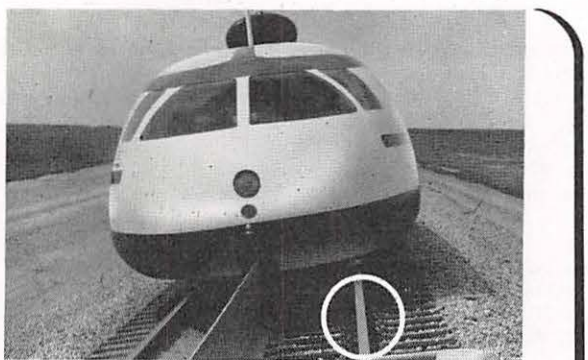
Howard E. McKinnon has joined **Berwick Forge & Fabricating** as manager customer service, Berwick, Pa., succeeding **Adrien L. Olivier,** resigned.

Leland S. Hughbanks has been named to the newly created position of manager, travelift sales and marketing, **Drott Manufacturing,** division of J.I. Case, Wausaw, Wis. Assisting Mr. Hughbanks as area sales managers will be **Marvin C. Zoromski,** Eastern North America, Europe, Africa and Middle East and **James B. Schielke,** Central and South America, Australia, Pacific Islands and the Far East, as well as Central and Western North America.

Jerry McNally, Southeast sales representative for **Tamper,** West Columbia, S.C., has been promoted to contract superintendent.

The Knoxville facility of the **Marmon Group** has officially become the **Marmon Transmotive Division.** Products manufactured by **Railway Products Co.** are now being manufactured there under the Marmon Transmotive Co. name.

A. Cole Thielemann, western regional sales manager, **Ringsdorff Corp.,** McKeesport, Pa.,



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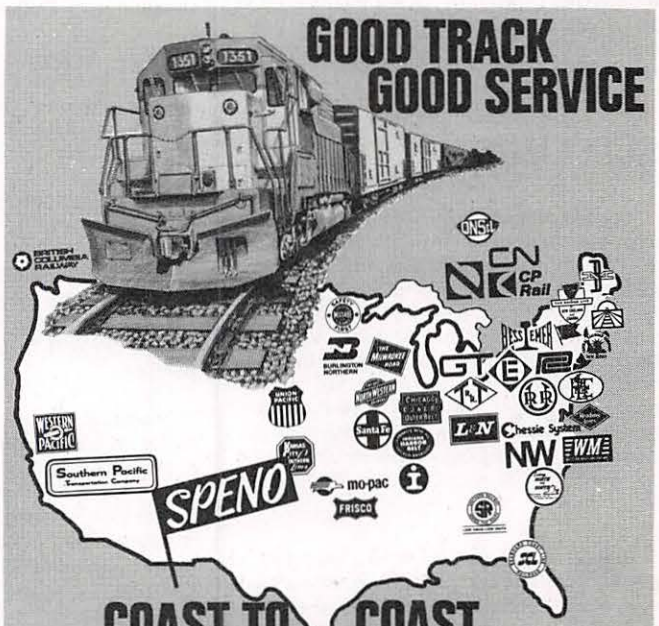

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has been promoted to field sales manager.

John R. Marchetti has been appointed manager of sales, **A. Stucki Co.**, Pittsburgh, Pa. Mr. Marchetti was formerly district sales manager, **Sangamo Electric Co.**

Robert D. McIntire has been named director of sales and marketing and **Robert E. McCluskey**, sales manager for commercial products, **Midwest Foundtry Divisions, Midland-Ross Corp.** Midwest Foundry is a consolidation of the former National Castings, Industrial Castings and Unitcast Divisions of the company. Mr. McIntire will remain at Sharon, Pa., and Mr. McCluskey at Cicero, Ill.

William W. Wilson has been appointed vice president for administration, **ACF Industries**, New York. **Bruce A. Gustafsen**, assistant comptroller, succeeds Mr. Wilson as comptroller.

Robert M. Dwyer has been appointed western district sales manager, **Shippers Car Line Division, ACF Industries**, San Francisco, succeeding **James O. Lawrence**, resigned. Mr. Dwyer was formerly manager of sales administration for the division at St. Charles, Mo.

Richard A. Bernard, assistant director of industrial relations, **American Steel Foundries**, has been appointed director of industrial relations, to succeed **Louis E. Dorman**, who retired June 1 after 36 years of service. **Theodore D. Cable**, manager of employee relations and benefits, replaces Mr. Bernard.

Richard E. Stusek has been named director of marketing, **ACI Systems Corp.**, South Holland, Ill.

William O. Chase has been named general manager of a new **KW Battery Co.** plant being constructed in London, Ky.

Jack C. Hodges has been appointed president, **IEC Holden Ltd.**, Montreal.

TRANSIT

Robert T. Pollock, general manager, **Cleveland Transit System**, will retire upon expiration of his five-year contract Nov. 1.

Stephen J. Kabala has been named marketing manager, **Chicago Transit Authority**, to head the newly created Department of Marketing. He was formerly central regional sales manager, **AMTRAK**, Chicago.

Terrell W. Hill, assistant to general manager for intergovernmental relations, **Metropolitan Atlanta Rapid Transit Authority**, has been appointed manager, General Development Division, **Chicago Transit Authority**. Four departments—Engineering, Capital Development, Development Planning, and Marketing—are under the General Development Division, which was created in a reorganization of the administrative structure of CTA. **Paul J. Kole** has been appointed manager, General Finance Division, and **John L. Aurand** has been named manager, General Administration Division, effective July 1. **Peter J. Meinardi**, manager, General Administration and Finance Division, will retire Sept. 1. During a transition period in July and August, Mr. Meinardi will serve as a special consultant to Chairman **Milton Pikarsky**. The General Operations Division is headed by **George Krambles**, manager.

Norman J. Ryker, Jr., has been appointed vice president and general manager, Transportation Equipment Division, **Rockwell International**, Atchison, Kan. Mr. Ryker was formerly vice president and general manager, Commercial Webb Press Division.

Elmer W. Belew, executive director, **Bi-State Development Agency**, St. Louis, has resigned.

OBITUARY

George E. Bennett, 69, retired vice president and purchasing agent, **Chicago & Eastern Illinois**, died Apr. 21 in St. James Hospital, Chicago Heights, Ill.

Carl M. Gautwick, 73, retired assistant freight traffic manager, **Northern Pacific**, died May 3 in Evanston Hospital, Evanston, Ill.

Edward G. Hooper, 90, retired assistant to the corporate secretary, **Baltimore & Ohio**, died March 12 at Greater Baltimore Medical Center. Mr. Hooper was chairman of the board, National Railway Historical Society.

Dayton Yeager, 53, general sales manager, **Berwick Forge & Fabricating**, Berwick, Pa., died May 16.

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St. Anselm's seminar:

Productivity: "Capital is both the

The panel moderator—Railway Age Senior Editor Gus Welty—had the first shot: "Productivity is a five-syllable word that starts arguments." But then the shots really started flying. This was the opening session of the 17th Annual Transportation Seminar at St. Anselm's College in Manchester, N.H.: The panel's job was to define the "elements of productivity," as openers for the over-all theme of the conference, "The Impact of Productivity on Pricing." On the program, the discussion was scheduled for three hours, but few people thought it would go three hours, and they were right. It ran three and a half hours, and it could have gone on all night.

As for the panel itself, leadoff man was Dr. Paul H. Banner, assistant vice president-market research of Southern Railway, and he was followed by David M. Munro, second vice president of John Hancock Mutual Life Insurance Co.; Dr. Alexander L. Morton, assistant professor at Harvard Business School and executive director of the Task Force on Railroad Productivity which issued its report late last year; Dr. D. Daryl Wyckoff, lecturer at Harvard Business School; and Kenneth H. Militzer, director-economic analysis for AT&T. Predictably, the emphasis was on productivity in the railroad industry—productivity and profitability and how they're related and what it's going to mean if both are not improved.

● **Capital: First and last.** Panelists explored productivity from a number of angles—but, as John Hancock's Munro noted, while "productivity in the railroad industry results from a combination of factors. . .capital is both the first and the last ingredient. Adequate capital can provide funds for rehabilitation and modernization of property, improved service and increased capacity and revenues—all of which should result in greater profits and this, in turn, will increase capital availability. Unfortunately, however, the transportation world does not move by logic or economic sense alone."

On the financial side, he pointed out, operating revenues have increased by more than 40% between the early 1960s and the early 1970s—but over the same period, average annual net railway operating income declined. And "that sort of performance does not gladden the heart of the average investor."

At the same time, while "large recurring capital investments are essential to the continuance of rail service and while capacity increases to meet future public need depend upon future capital investment, in recent years railroad capital spending has averaged less than one-half of the amount estimated to be necessary. Since 1948, average expenditures have ranged between $1 billion and $1.5 billion in most years. In the same period, prices of locomotives and passenger cars have doubled, while freight-car prices have nearly quadrupled."

At this point, said Dave Munro, "There are two major problems facing the railroad industry in its efforts to attract private capital. First, productivity has been growing more slowly in the railroad industry than in most other industries. Net railway operating income—the measure of the profitability of rail operations—has shown a downward trend. Moreover, operating income hit successively lower levels during the recessions of 1954, 1958, 1961 and 1970. In 1973, NROI had recovered to $859 million, and the rate-of-return on investment was 3.08%. This rate-of-return is so low that no sophisticated investor is willing to provide funds for future investments in fixed plant."

Equipment? Sure, up to now the industry's ability to finance equipment "at reasonable rates has been satisfactory—probably because of two factors: First, the fact of a substantial shortage of freight equipment, which gives an investor some confidence that those obligations will be paid through thick and thin; and second, the absolute legal right of the investor to repossess his equipment. We should note, by the way, that any interference with that right of immediate repossession will substantially increase the cost of borrowing for the

Productivity bargaining an "invitation

Productivity bargaining. It has a nice ring to it, but (1) what is it? and (2) does it work? First, it means a number of different things to different people. And second, no, it doesn't really work very well.

Taking on the challenge of delving into productivity bargaining at St. Anselm's seminar was Kenneth H. Militzer, director-economic analysis for AT&T. And he tore right into the topic, with an observation at the outset that "few things could be as destructive to our wage/price system as tying an industry's wages to its own productivity, nor could there be a greater invitation to inflation than for a few high-productivity industries to let their unions sell them on the idea that their productivity somehow justifies extra-large wage increases."

● **Productivity—and "ransom."** Militzer had several points to make regarding transportation generally and railroads specifically:

—In the post-war period, the rise of productivity in transportation, measured in output-per-manhour, exactly matches the U.S. average. But the average rise in compensation on a manhour basis has exceeded the rise elsewhere.

—When the Pay Board set its 5½% wage standard, it allowed for four bases for exceptions, one of which was increased productivity. But, "when the Pay Board talked about increasing productivity, it usually seemed to be talking about buying-back restrictive work practices. This has a basic flaw: That is, it rewards the bad guys. For example, early in the history of the Pay Board, railroads workers were able to get a 42% increase in 42 months only because they had restrictive work practices that they could trade for it. The problem, of course, is that these work rules should have been changed as the conditions underlying them changed, as happens in most industries. The poor guys that have been doing the right thing all along don't have that kind of hostage to trade for ransom, so under these rules their good behavior is rewarded by their falling behind in the wage race."

—At the same time, "I'm not so naive as to not realize that sometimes an industry is better off to pay the ransom and get its hostages back. In doing so, however, it should clearly understand what it is doing, and it shouldn't pretend that its actions are somehow soundly based in the economics of wage theory. Moreover, it should also recognize that it is not operating in a vacuum, and whatever it does for one group—however logical or necessary it might seem—is likely to affect the demands from other groups as well. There was a rather long strike on the Long Island a while back that apparently occurred largely because the Long Island's trainmen got an above-guideline increase approved by the Pay Board earlier on the justification that it was coupled

first and last ingredient. . ."

best railroads—and others will not be able to borrow at all."

● **Growing doubt.** As for investment in fixed plant, a major problem is "the investor's increasing doubt about his ability to realize on the security."

This, Munro declared, "is at the heart of the dilemma created by the Regional Rail Reorganization Act, which was primarily designed to solve the Penn Central problem. It is unclear what parts of PC's operations are necessary in the public interest, and there is no obvious method of determining in a reasonable period of time which of these services is essential. It's also unclear what portion of the property is self-sustaining and how payment will be made. Further, the method provided for in the Act for the rail property to continue to be operated in the overriding public interest may be unconstitutional because it involves the taking of private property with inadequate compensation.

"If the only solution to these problems is to follow the course set out for Penn Central in the reorganization act, the knowledgeable investor will make no further investments in the railroad industry."

Munro's conclusion: "If it is considered desirable that private capital be available to the transportation industry, all of the elements that improve productivity must merge to provide a significant increase in the rate-of-return and give assurance of security of principal. Only then can investors be convinced that they are putting their capital into a strong, healthy industry."

But what about railroad productivity? "What about" is simply that Dave Munro is right: Productivity *has* been growing more slowly—and indices sometimes quoted to prove the opposite are simply not reliable.

● **Indices that aren't.** Both Southern's Paul Banner and Harvard's Alexander Morton took swings at these "quoted" indices—and both concluded that railroad productivity has been coming at a rate far lower than indicated by, for instance, the Bureau of Labor Statistics index which covers ton-mile and passenger-mile output per manhour.

By the BLS measurement, rail productivity has grown at an average rate of 5.2% per year from 1947 to 1970, and by 6% per year from 1957 to '70. Meanwhile, productivity growth in the private economy as a whole in the postwar period is estimated at 3% annually.

Banner, however, challenges sole reliance on the ton-mile (and/or passenger-mile), arguing that for most classes of employees the carload, car-mile and train-mile are more appropriate measures of work-units produced. With proper matches and weightings made, Banner estimates labor productivity growth during the postwar years not at 5%-or-better but at 2%.

If you look at outside estimates, you find, for instance, that the Price Commission pegged railroad productivity increases at 6.3% per year, 1961-71, and that the BLS put the figure at 8.9%, 1971-72. Says Paul Banner: "I consider these preposterously high figures—stemming from lack of good data." By his reckoning—in which he attempted to remove much of the upward bias in the usual estimates—railroad productivity increases are no more than 1.7% per year, and probably not even that. As he points, out, even that low figure could be cut by a quarter to a half because some bias still remains in his weighted series of measures—bias represented by such elements as in-house production (carbuilding) and changes in average length of haul. On length-of-haul, there was an increase of almost 12% in the 1960-70 period—but, because of rate tapering, revenue increases were at a substantially lower percentage. And, as Banner observed, while freight salesmen work hard to get longer hauls, an increase in the average "is usually the result of losing the shorthaul traffic."

● **What does it mean?** But, is it really important if Banner (and the Task Force) are right about productivity increases and others—the Price Commission and BLS—have been wrong? It surely *is* important. As Southern's researcher noted, railroads were trapped

to inflation"?

with an agreement to end featherbedding. The line's shopcraft and clerical employees then asked for equal treatment—even though they didn't have any featherbedding practices to trade for it." Militzer's conclusion: "It is this tendency for wage rates in all areas of the economy to move together which makes wage bargaining based on the productivity of any one group or industry so illogical and dangerous and inflationary."

● **Why? And why not?** AT&T's director-economic analysis also explored the usual arguments in favor of productivity bargaining—and the answers to those arguments:

—Labor is responsible for productivity. Not so, says Militzer. Labor is usually *not* responsible for productivity increases. And if restrictive work rules prevent such increases, labor is "hardly responsible for an increase if it allows work practices to be changed."

—Equity calls for a fair share. A definition of "fair" is needed, Militzer observes, and it's "clearly unfair to let one group's wages run far ahead of anyone else's merely because that group happened to take jobs some years ago in an industry susceptible to productivity increases."

—Shareholders gain at labor's expense. Again, not so, says Militzer. "What you actually have is a diminishing share for capital despite a more rapid increase in capital invested than in labor worked," says AT&T's man.

—Labor should be paid for increased skills. No argument, but the increase in pay should *be* for increased skills and "should only take the worker to the same wage level as applies to other workers with similar skills."

—Rewards for high labor productivity serve as incentives. The Long Island settlement, Militzer contends, "is living proof of the fallacy in this line of approach. That is, once you give the increase to one group, it becomes impossible to deny it to other groups, even where the incentive arguments do not apply."

Militzer sums up the productivity bargaining situation this way: "There's no economic justification for any group arguing that wage rates should be increased over time in line with changes in their own industry's productivity, as unjust as that might seem at first. Rather, workers are paid in line with the relative supply and demand of their skills in the economy as a whole. On the other hand, it's perfectly sound economics to increase wages in all industries in line with the rise in productivity in the economy as a whole. Only in that way—obviously allowing for a certain amount of flexibility—does the economy avoid the inflation that would result from having the wages of workers in low-productivity industries chase the wages of workers in high-productivity industries in an ever-upward spiral."

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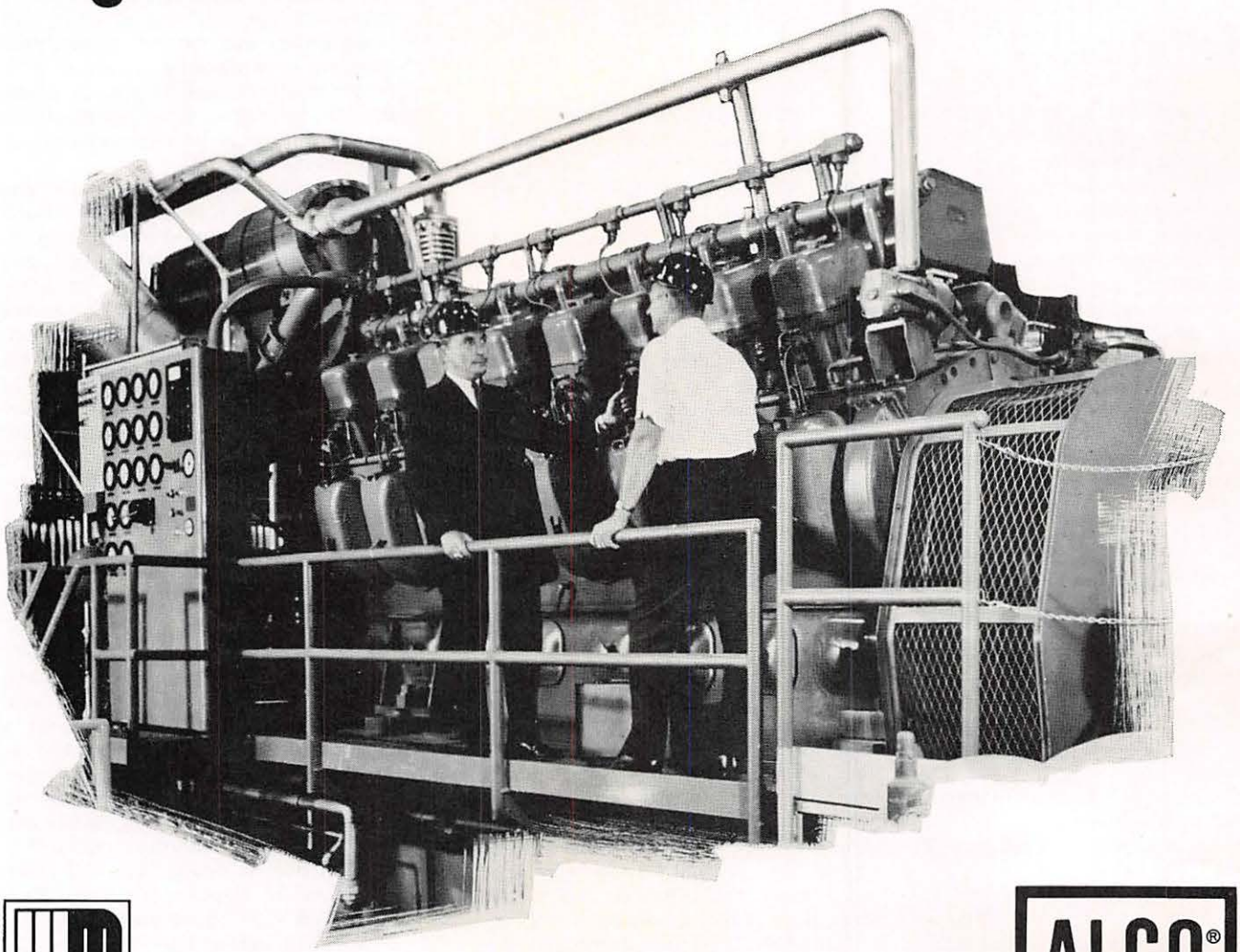

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"Capital inputs have actually grown faster than output, resulting in a decline of productivity"

in Price Commission proceedings because the Commission insisted that the industry absorb cost increases within its productivity-increase range—and it used those "preposterously high" increase figures. In addition, inflated estimates have given management fits at contract-bargaining time.

Banner summed it up this way: "We're being caught time and time again on these poor measures of productivity—and we must change them, we must find out in a realistic way what's happening in our industry. Regardless of the measures used, I can be certain of one thing: Improvements in productivity in railroading are substantially below those in the economy as a whole—and substantial increases are needed if this industry is to survive. If we don't get better measures, for one thing, then we can't justify the capital investment which is required to improve productivity and make this industry a more viable one."

● **Overstated, understated.** As Morton pointed out, the Task Force on Railroad Productivity also rapped use of the ton-mile as the measure of output, contending that it tends to overstate productivity growth. In addition, he said, use of manhours "tends to understate the growth, or overstate the decline, of factor inputs and this also tends to give an upward bias to measured rail productivity gains. Using manhours as its measure of inputs, BLS is actually calculating the growth in labor productivity rather than total-factor productivity. Total-factor productivity is probably the better over-all measure of an industry's success in improving its internal efficiency and in adapting itself to a changing market. The shortcoming of partial-productivity measures such as labor productivity is that the industry may have been substituting other factors of productivity for the one being measured—and this is just what has occurred in the rail industry. First, the railroads have substituted capital for labor—and, though most industries have increased their capital intensity during the postwar years, capital substitution has occurred at roughly twice the average rate in the railroad industry. Labor work-rules and related constraints on the deployment of personnel may be partly responsible for this accelerated capital substitution. Too, the railroads, like other industries, have substituted intermediate-inputs—purchased goods and services—for primary inputs of labor and capital. Understandably, the measured rate of productivity growth is lowered as rising inputs of capital and purchased goods and services are included in the divisor along with manhours of labor."

Considering all factors, Morton noted, the Task Force concluded that "total-factor productivity in the railroad industry has risen at an annual rate of 1% to 2%, far below the 5%-to-6% rise suggested by ton-miles per manhour and substantially below the gain achieved by the rest of private industry, about 2.5% on a comparable basis."

The Task Force, he added, finds that most of the difference between the BLS index and the Task Force estimate crops up when capital inputs are included in their full amount and with proper weighting relative to labor inputs: "In fact, the Task Force focuses on poor capital productivity as one of the primary challenges confronting the railroads. Capital inputs have actually grown faster than output, resulting in a decline of measured rail capital productivity averaging about 1% a year during the postwar decades."

● **Rail vs truck.** Harvard's Daryl Wyckoff also took a few swings at conventional productivity measurements, in the specific context of comparing rail and motor-carrier performance. Over the past 20 years, he noted, motor-carrier productivity "has the appearance of nominal gains at best, while the railroads have made substantial gains in revenue ton-miles per employee. But, has this left the motor carriers in a weakened competitive position? Or is there more to the story?"

Questions deserve answers, and Wyckoff had his: "While there have been several factors that have minimized the gains in motor-carrier productivity, the picture is not as bad as it may seem. Standard productivity measures do not adequately account for changes in traffic mix, or measure the quality of the service."

If you compare revenue generated per employee during the past two decades or so by railroads and motor carriers, he pointed out, "you find that both have increased and the railroads appear to be closing in on the motor carriers. But such a comparison may be deceptive, for several reasons. First, what has been the record on revenue yield per ton-mile? Class I railroads have had only a nominal increase in yield, partially explained by increased emphasis on low-rated bulk commodities. Motor carriers, on the other hand, have seen substantial increases in yield, reflecting their greater emphasis on ltl traffic. Then, railroads have made substantial gains in ton-miles generated per employee, while the net gains of the motor carriers have been nominal. Part of the reason motor carriers have not appeared to have gained in productivity, however, lies in their conscious, service-oriented strategy—which has been successful in bringing them gains in market share in the intercity market. Motor carriers appear to have been very effective in matching operations and marketing, though this may have led to inefficient use of capacity and inputs. Meantime, have the railroads become increasingly more efficient in producing a less-desirable product?"

● **Playing to the market.** Truckers, Wyckoff concluded, "have been market-oriented and have often sacrificed productivity to more effectively produce the service the market desired. Since service appears to be the distinctive feature of the motor carriers' offering, it's difficult to see a major change in this strategy, and I suspect that carrier-initiated productivity gains will be marginal. The more promising fields for gain are, first, restructuring of the rate structure to encourage shipping practices that result in opportunities for increased productivity, and, second, a relaxation of size and weight limits. Competitive viability of motor carriers depends on either of these actions—or the continuation of shippers paying a premium for high levels of service."

Interestingly, Wyckoff sees past productivity gains as resulting mainly from development of the Interstate Highway System, increases in size and weight limits, increases in speed limits and use of improved equipment. But, he warns, while there is discussion of further easing of size and weight limits, "the future gains from the completion of the Interstate are not as promising as they were. Size and weight restrictions have less meaning to the short-haul ltl carriers who now move lightly-loaded trailers to meet service schedules. In addition, motor carriers face potential losses in productivity due to reductions in speed limits—and this also raises a question about the future advantages of high-horsepower equipment."

This 17th annual St. Anselm's seminar, put on with the assistance of Delta Nu Alpha National Transportation Fraternity Chapter 105 and 14 cooperating organizations (including the AAR), concluded with a discussion of productivity improvements, chaired by Richard Haupt, director-transportation and traffic for Ford; and a panel on productivity's reflection in pricing, led by DOT's Dr. E. Grosvenor Plowman, retired VP-traffic of U.S. Steel. ■

75 YEARS AGO IN

(June 2 and June 9, 1899)

INCORPORATED: INDIAN TERRITORY GUTHRIE & WESTERN—Incorporated in Oklahoma to build a railroad from Texarkana, Tex., through the Indian Territory and the counties of Pottowatomie, Oklahoma, Lincoln, Logan, Kingfisher, Blaine, Dewey, Woods and Woodward, to Woodward, Okla., with a branch from Wagoner, I.T., through Lincoln, Paynes and Logan counties, to Guthrie, a distance of 130 miles. Capital stock, $1,000,000.

***

An interesting subject which is to come up for discussion at the meeting of the National Association of Local Freight Agents' Associations at Norfolk, Va., next week, is the use of the typewriter in the making out of waybills, freight bills, etc. Several railways are making experiments in its use, or, having passed the experimental stage, are now employing the typewriter to replace pen work more or less largely.

***

An express train on the Union Pacific was held up near Wilcox, Wyo., on June 2, by six masked men, who blew open the express car and safe with dynamite and secured the contents of the safe, said to amount to $36,000 in money and several thousand dollars in valuables. After flagging the train the robbers covered the trainmen with Winchesters. Engineer Jones resisted and was knocked down with the butt of a rifle, receiving a serious scalp wound. The engine and baggage and express cars were cut off from the rest of the train and moved forward for half a mile, where the dynamite was used. After endeavoring to blow up a bridge which separated the two sections of the train, the bandits escaped to the mountains. The Union Pacific authorities have offered a reward of $1,000 each for the capture of the robbers.

***

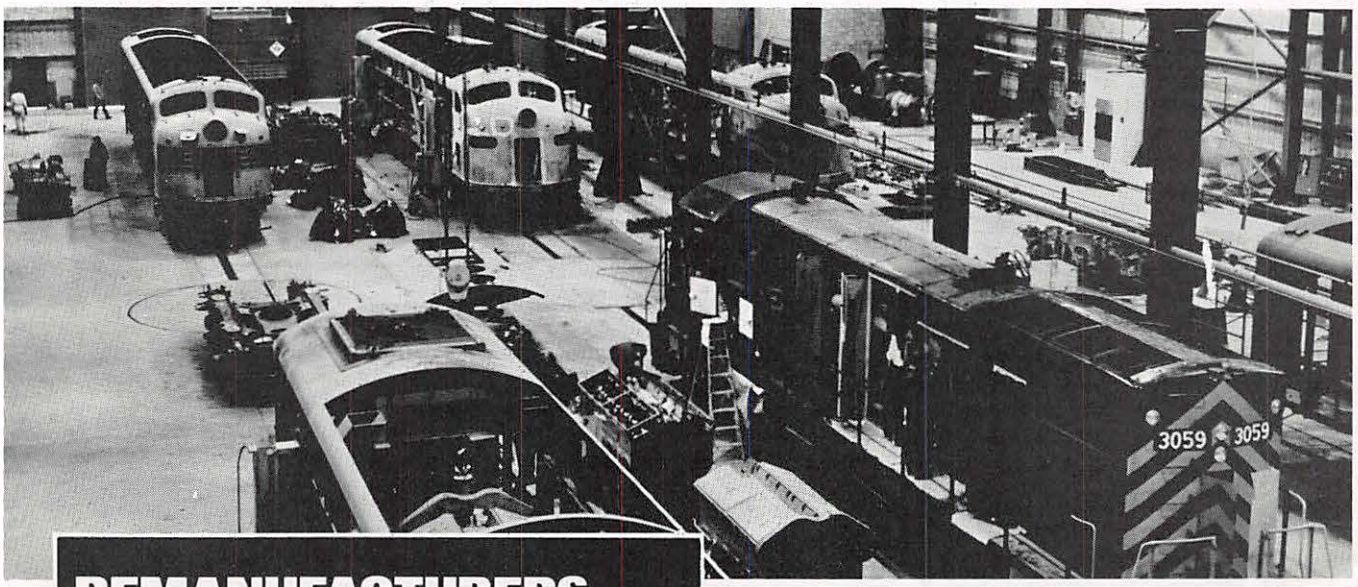
The Norfolk & Western Railway is building 1,000 hopper-bottom gondola cars of 100,000 pounds capacity. Specifications call for 650-pound N. & W. cast-iron wheels, arch-bar trucks with N. & W. steel I-beam bolsters, Westinghouse air brakes, N. & W. steel brakebeams, 250 each of Buckeye, Chicago, Tower, and Hein couplers, N. & W. drawbar attachments, M.C.B. 5 by 9 journal bearings with N. & W. modifications, N. & W. side bearings and N. & W. steel stake pockets. These cars are illustrated elsewhere in this issue.

***

The Pressed Steel Car Company have recently received orders for 300 pressed steel cars for shipment to Egypt.

***

The Southern Railway announced that on and after June 1 its 1,000 and 2,000 mile tickets will be good over the Alabama Great Southern between Chattanooga, Tenn., Birmingham, Ala., and Meridian, Miss., and that the mileage tickets of the latter will be good for transportation over the lines of the Southern and the Northern Alabama. The 1,000-mile tickets are sold at $25 and the 2,000-mile tickets at $50, and are now good over the entire system, covering over 6,000 miles of road.



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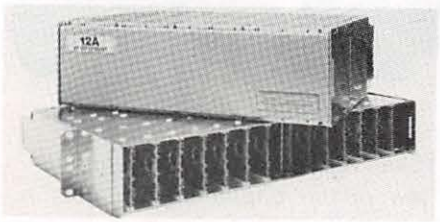
Circle 21 on Reader Service Card

New Products Report

Large carbuilding channel offers economy, flexibility

A 24-in. channel, largest commercially available, is suitable for railroad car fabrication, according to U.S. Steel. The MC24, available in weights of 55.2 and 60 lb per ft, has flange widths of approximately 4 in. The channel is available in average 50-ft lengths. It is seen as offering economy and flexibility in fabrication, as well as reduced construction costs.

Circle 60 on reader service card



New line offers expanded flexibility in VF amplification

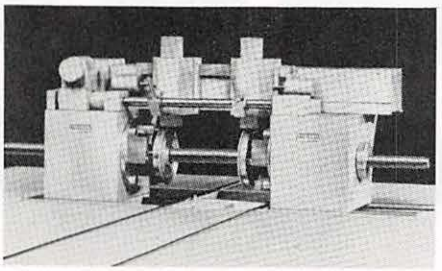
A new line of VF repeaters and solid-state DX signaling equipment offers expanded flexibility in voice-frequency amplification and signaling extension between carrier equipment and physical facilities. Called type 12A, the GTE Lenkurt, Inc., all-modular equipment is designed for interoffice trunking, for private line and special service expansion and for upgrading circuit performance. Available in three shelf choices, 12A offers an extremely wide range of VF amplification and DX signaling equipment flexibility. Two-mounting-space shelves are available for 19- or 23-in. rack mounting, accommodating 12 or 14 2-wire/4-wire VF repeaters. A three mounting-space shelf for 19-in. rack mounting accommodates 12 VF repeaters, DX signaling units, attenuator units or combinations.

Circle 61 on reader service card

Primer system speeds the re-coating process

A fast-drying primer system has been developed by Grow Chemical Corp. to speed the re-coating process on rail cars and motorized vehicles. The one-package, epoxy ester primer (Awlgrip 15-N-23) may be applied over previously painted surfaces to cut stripping and surface preparation time. Properly applied, it will stop lifting and bleeding from previously coated surfaces. It dries in air in 20 minutes. Two hours after application the surface is ready for top coating. Although developed for use with the Awlgrip polyurethane coating system, the primer is equally compatible with any other type of exterior finish, including vinyls and epoxies. It may be brushed or rolled as is, or applied with conventional spray paint equipment using recommended reducers.

Circle 62 on reader service card



Roll-through wheel-turning lathe works fast, accurately

The Farrel Co. Wheel-Matic lathe for roll-through wheel turning reduces loading time. The numerical control system assures consistent accuracy for wheel diameters from 24 through 55 in. and axle lengths from 65 through 98¾ in. Single-point movement of the driver system adjusts drivers to suit wheel diameter variations. The wheelsets are automatically elevated from lead-in rails. An automatic probe with program selector system determines the amount and profile of metal to be removed, eliminating a separate measuring station or calipering. No template setting or changing is necessary—a program for the type of wheel and diameter is simply set. Programs are provided for multiple-wear wheels with 1:20 taper (wide and narrow flange), multiple-wear with cylindrical tread (wide and narrow flange) and one-wear with wide flange.

Circle 63 on reader service card

Portable buildings offered for security check points

A line of pre-engineered, portable buildings designed to solve a wide range of security problems, outdoors and indoors, is available from Keene Corp.'s Porta-Fab Division. The buildings, ideal

for check points at entrances to any key areas, are pre-assembled and delivered ready for immediate use. Fabricated with welded aluminum components for maintenance-free service, they offer 360-deg. visibility and are available in sizes ranging from one-man sentry building to full-service guard houses. The buildings are wired for 110-volt and 220-volt electrical power and have sliding or swing doors and sliding tempered safety glass windows which can be securely locked. Heating, air conditioning and other options—such as spotlights, tinted glass and rest rooms—are offered.

Circle 64 on reader service card

NEW LITERATURE

TOILET. A new chemical toilet for the transportation industry, the Tuffy, is described in a four-page illustrated brochure from Inca-One Corp.

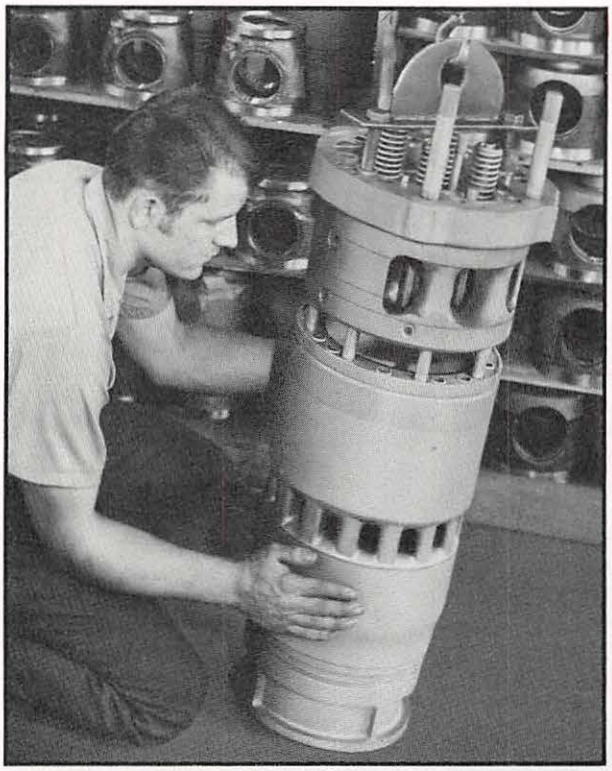
Circle 70 on reader service card

NOISE CONTROL. Soundcoat Co. has made available a 10-page illustrated brochure entitled "Noise Control Materials." It describes Soundcoat's complete line of products for sound absorption, vibration damping and noise attenuation.

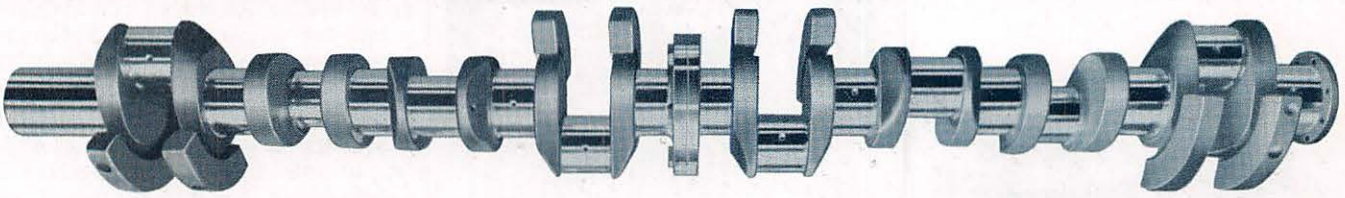
Circle 71 on reader service card

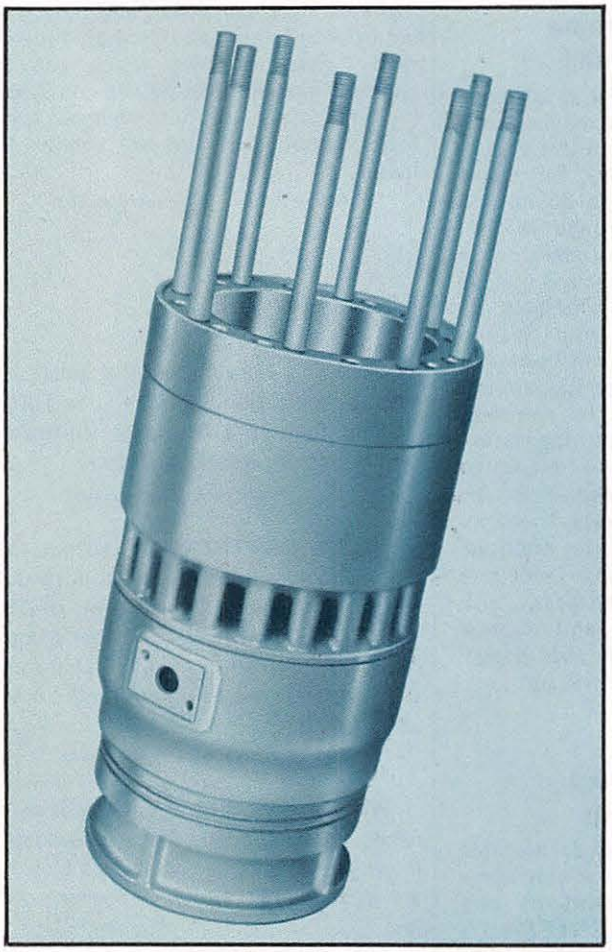
WIRE MARKERS. A catalog of wire, cable and safety markers is available from AMP Special Industries. Listings are in sequential order whenever possible.

Circle 72 on reader service card



We've got the GUTS





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Circle 12 on Reader Service Card

Market Outlook

CARLOADINGS

Loadings of revenue freight in the week ended May 25 totaled 550,442 cars, according to the Association of American Railroads. This was an increase of 8,066 cars, or 1.5%, compared with the previous week, and a decrease of 13,549 cars, or 2.4%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended May 25 are estimated at 17.5 billion, a decrease of 0.6% below the corresponding week of 1973.

REVENUE FREIGHT CARLOADINGS

	May 25 week	May 18 week	May 11 week
Grain	23,210	24,013	24,779
Farm products	9,841	9,811	9,374
Metallic ores	47,810	46,606	44,736
Coal	99,434	96,171	98,438
Crushed stone, gravel & sand	29,519	28,673	29,841
Nonmetallic minerals	17,297	17,003	17,260
Grain mill products	18,803	18,360	17,713
Food and kindred products	22,879	22,179	22,013
Primary forest products	25,050	24,872	24,931
Lumber & wood products (except furniture)	16,572	17,068	16,915
Pulp, paper & allied products	23,880	23,655	23,142
Chemicals & allied products	29,110	29,201	30,161
Petroleum products	8,231	8,163	8,437
Stone, clay & glass products	22,872	22,486	22,410
Coke	8,683	8,210	8,992
Metals & products	27,697	27,513	27,083
Motor vehicles & equipment	24,586	24,780	24,401
Waste & scrap materials	18,340	18,656	18,695
Forwarder & shipper assn. traffic	11,470	11,156	11,204
All other carloads	64,658	62,443	62,950
LCL traffic	500	432	385
Total cars loaded	**550,442**	**541,451**	**543,860**
Cumulative total, 21 weeks	1974		1973
	10,923,928		**10,848,437**
Estimated revenue ton-miles (billions) 21 weeks	347.0		337.6

PIGGYBACK LOADINGS

U.S. piggyback loadings for the week ended May 18 totaled 30,000 cars (0.4% below the corresponding week last year) and 51,470 trailers or containers (down 2.3% week 1973). Cumulative volume for the first 20 weeks of 1974 is 626,049 (up 8.6% from last year) and 1,086,047 trailers or containers (up 9.4% from 1973).

IN CANADA

7 days ending	Tons of Revenue Freight	Cumulative Totals
May 7, 1974	4,967,545	77,049,250
May 7, 1973	5,082,764	77,924,934

● *CP Rail.*—Invested $2.2 million in construction of one-spot car repair shops at Windsor, Ont., and at Alyth Yard in Calgary, Alta. Plans call for similar shops at Saskatoon, Thunder Bay, St. John, N.B., and expansion of one-spot facilities at Coquitlam, B.C., and Montreal's St. Luc Yard.

● *Montreal.*—Ordered 423 rubber-tired Metro cars from Bombardier Ltd., a Valcourt, Que., manufacturer of snowmobiles. While the $117.79 million bid was higher than the Canadian Vickers bid of $117.65 million, the Metropolitan Transit Bureau said Vickers' bid was rejected because couplers did not meet specifications. Vickers was quoted as calling the award "misguided," and there was speculation the company might contest the decision. Delivery by Bombardier would begin in late 1975, and be completed in 1978.

● *Trailer Train.*—Directors approved a $9.5-million program for acquisition of 309 flat cars from Pullman-Standard and Thrall Car. Orders will include cars for intermodal service and for movement of agricultural and construction equipment.

● *Freight-car orders and deliveries.*—The following report has been received from the AAR and the ARCI:

DELIVERED

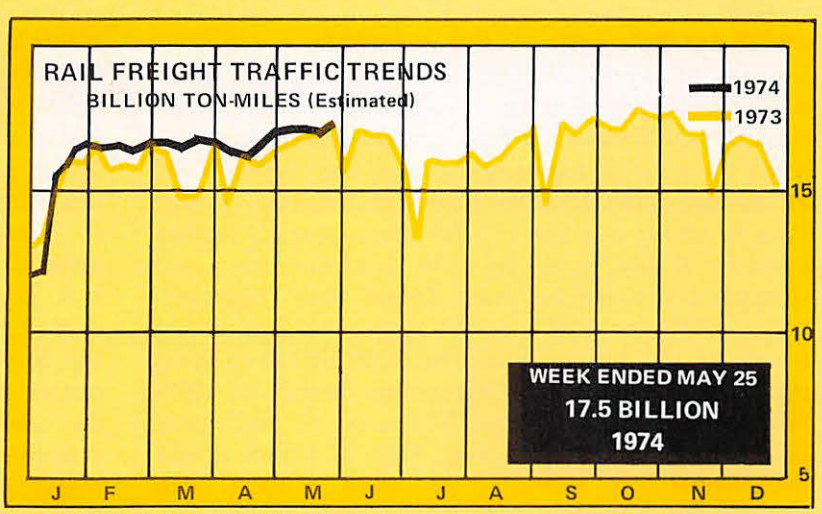
	April '74	March '74	April '73
Built new by carbuilders	4,418	5,112	3,766
Built new in R.R. shops	305	243	235
Built new—total	4,723	5,355	4,001
Rebuilt	110	23	66
TOTAL DELIVERED	**4,833**	**5,378**	**4,067**

ORDERED

To be built new by carbuilders	11,412	10,345	13,894
To be built new in R.R. shops	1,981	169	100
To be built new—total	13,393	10,514	13,994
To be rebuilt	0	500	12
TOTAL ORDERED	**13,393**	**11,014**	**14,006**

ON ORDER AND UNDELIVERED

	May 1, '74	Apr. 1, '74	May 1, '73
To be built new by carbuilders	82,427	75,493	34,267
To be built new in R.R. shops	5,908	4,232	2,260
To be built new—total	88,335	79,725	36,527
To be rebuilt	908	1,018	487
TOTAL ON ORDER	**89,243**	**80,743**	**37,014**



Source: Association of American Railroads

Moving People

STOKES TO HEAD APTA STAFF

Bill R. Stokes, who over a period of 16 stormy years guided the Bay Area Rapid Transit system from concept to reality, is leaving BART to become executive director of the American Public Transit Association. APTA will officially come into being in Washington in October, the product of a merger of the American Transit Association and the Institute for Rapid Transit. Stokes, the tough-skinned target of intensive criticism in the Bay Area from die-hard rail transit foes, nonetheless enjoys a national reputation as the man who has perhaps done more to promote the cause of mass transit than any other. He is highly regarded at the Department of Transportation, and is known as a persuasive and credible witness on Capitol Hill. A former newspaperman, Stokes joined BART as director of information in 1958 and became general manager in 1963. His appointment to head up APTA's executive staff was announced jointly May 24 by William J. Ronan and Stanley H. Gates, Jr., who will be chairman and president, respectively, of the new association.

COMING UP: IRT'S LAST MEETING

Members of the Institute for Rapid Transit will gather in Los Angeles June 18-21 for their last annual conference. (IRT's merger with the American Transit Association becomes effective in October.) At the Los Angeles meeting, there will be speeches by DOT Secretary Claude S. Brinegar, UMTA Administrator Frank E. Herringer and Los Angeles Mayor Thomas Bradley. But the emphasis will be on working sessions. Workshop and panel sessions, many running concurrently, will cover a wide range of operating, planning, legislative and financing topics.

CROSS-FLORIDA LINE FOUND FEASIBLE

Consultants employed by the Florida Department of Transportation have determined that "it is possible to construct a rapid transit system that will share the existing highway rights-of-way between St. Petersburg and Daytona Beach and provide a trip time of about one hour." The Cross-Florida Transit Corridor Study, made by H.W. Lochner, Inc., and Community Sciences, Inc., found that "approximately 77%, or 120.3 miles, of the total guideway length of 157.1 miles could be built within existing rights-of-way while the remaining length of 36.8 miles would require about 151 acres of additional land." Cost of the guideway, 62% of which would be elevated, is estimated at $585 million. The consultants suggested that "noise may be the predominant environmental consideration which will adversely affect the rapid transit facility development in the corridor and which can be expected to have most of its impact in urban areas."

CTA SPEEDING UP SIGNAL PROJECT

In the wake of an accident in which a CTA train rammed the rear of a standing train—injuring some 220 persons—the Chicago Transit Authority is moving more quickly than anticipated on a program to install cab-signaling equipment to control both the speed and the spacing of trains. UMTA and Illinois DOT have approved overtime work to complete the installation on CTA's south elevated route, where the accident occurred; the two agencies have also OK'd immediate advertising for bids for installation of the equipment on three other routes. When all of these projects are completed, the entire CTA system will have one form or another of automatic signal protection. Meanwhile, a number of investigations of the Southside accident are moving forward, including one by a blue-ribbon panel headed by Dr. William J. Ronan, former head of New York's Metropolitan Transportation Authority, which will look into broad aspects of CTA's facilities, equipment and operations.

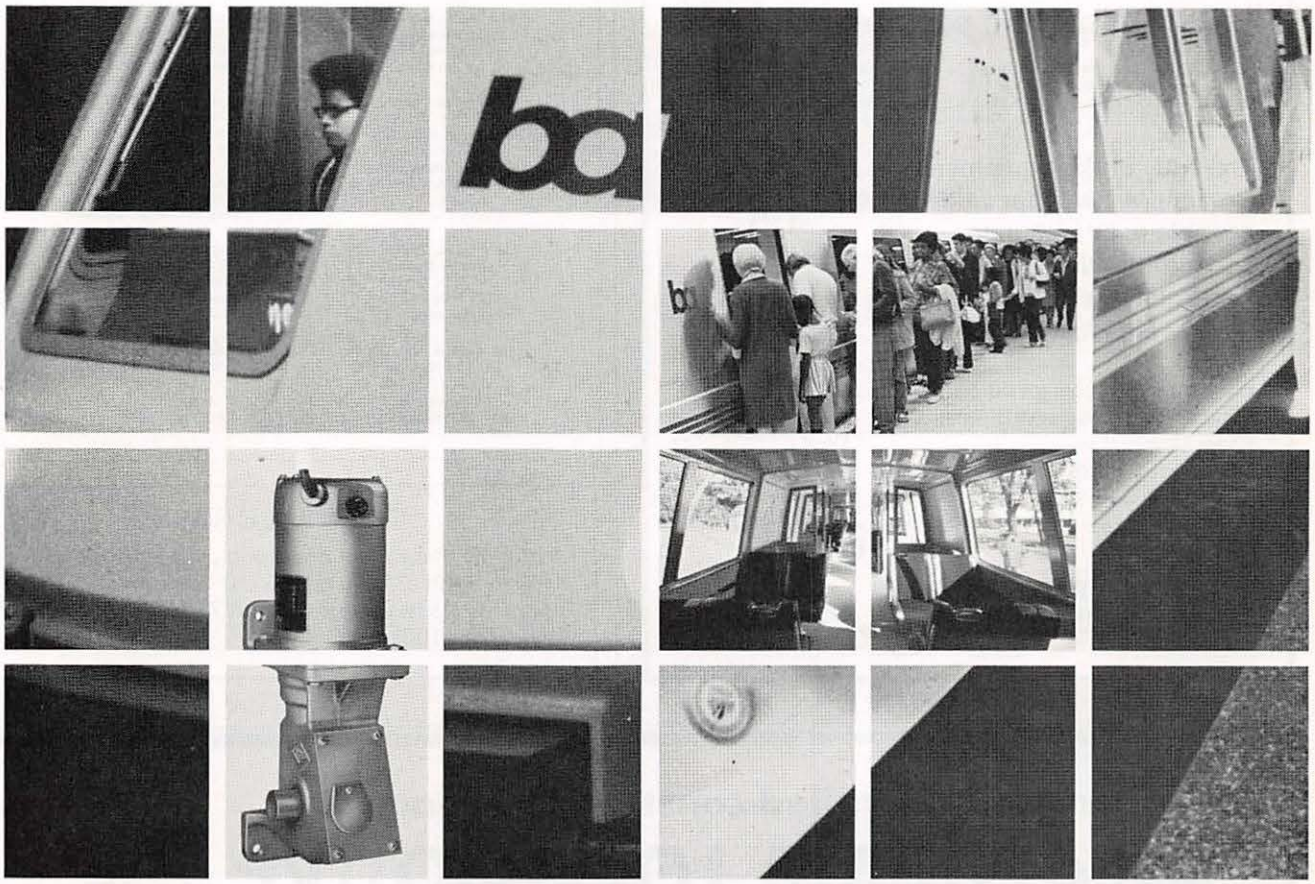
NEW CARRIER FOR AUTO-TRAIN

Southern Iron & Equipment and Evans Products are building a prototype fully enclosed tri-level auto-carrier for the Auto-Train Corp. The prototype will be delivered this summer and, says Auto-Train President Eugene K. Garfield, "upon completion of tests, tri-level fully enclosed carriers will be ordered." Automobile capacity on trains equipped with the new carriers will increase from 160 to 180.

ROHR LICENSES ANF-FRANGECO

Last year, Rohr Industries was granted exclusive rights to build and market French-developed turbine trains in the U.S., Canada and Mexico (RA, Aug. 13, 1973, p. 46). Now, Rohr has licensed the French manufacturer, ANF-Frangeco, S.A., exclusive rights to manufacture cars in France using lightweight-aluminum rail car technology developed by Rohr for U.S. transit systems. ANF-Frangeco also gets non-exclusive rights to sell such French-built cars within the European Common Market, and the two companies are considering setting up a joint company to do business outside the Common Market. Rohr's contracts include cars for BART and the Washington Metro; ANF-Frangeco is the builder of the turbine trains operated by Amtrak in the Midwest.

Vapor Slim-Line Door Operators "fit in" with BART's New Technology for Rapid Transit Cars...



Photos courtesy Rohr Corporation and Bay Area Rapid Transit District

*TM Vapor Corporation

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Vapor Corporation also designs, develops and manufactures electronic, electromechanical and pneumatic products to meet the high standards of reliability and performance demanded by today's transportation systems.

For information contact Vapor Corporation, Transportation Systems Division, 6420 West Howard Street, Chicago, Illinois 60648. In Canada, Vapor Canada Limited.

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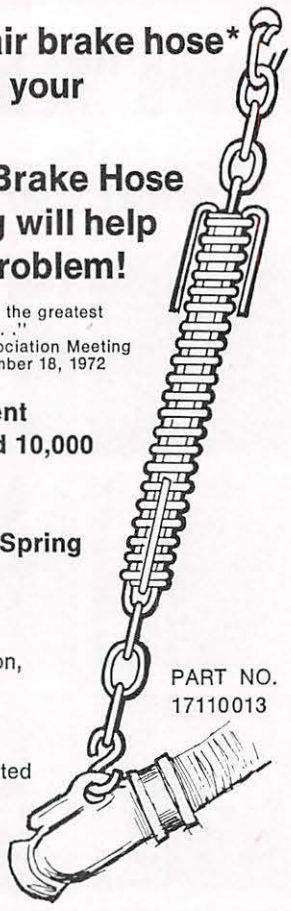

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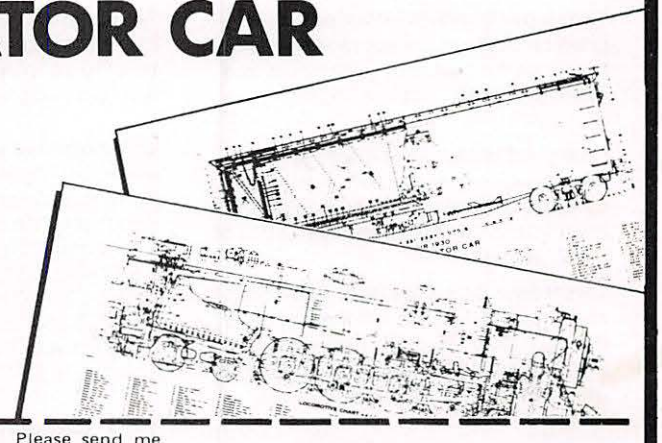

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Viewpoint

Who gets what from the tax dollar

With all of the stories that have been flooding the media recently about the "billion-dollar bailout" of Penn Central (a simplification propagated by those who don't seem to know the difference between a grant and a guaranteed loan), and those Greyhound ads grumping about the emptying of the Federal Treasury into the coffers of Amtrak, it is no wonder that the impression has gotten around that the railroads have, at last, fought their way to the No. 1 position at the public trough.

Not so. The fact, is, the railroads continue to be the rankest amateurs, in a field of seasoned pros, when it comes to divvying up the transportation dollars disbursed each year by the Federal, state and local governments. Here are the latest returns, as compiled by the Economics and Finance Department of the Association of American Railroads:

SUMMARY OF 1974 GOVERNMENT SPENDING FOR INTERCITY TRANSPORT SYSTEMS AND FACILITIES

(in millions)

	Federal	State and local	Total
Airways, etc.	$1,654	$ —	$ 1,654
Airports	258	1,200	1,458
Airline cash subsidy	73	—	73
Highways	5,119	19,718	24,837
Waterways	532	540	1,072
High-speed ground transp. (including rail research and development)	45	—	45
Total	$7,681	$21,458	$29,139

True, those figures do not include loans and grants in support of local mass transportation; nor do they include Federal grants to Amtrak in fiscal 1974, or the $85 million in Federal aid authorized to help bankrupt railroads, over a two-year period, to maintain essential transportation services. But even if all these were added in, the total would be a drop in a $29-billion bucket.

The argument is often advanced that those carriers which benefit from government-provided facilities pay for them through user charges; this has some merit, but not much. The AAR notes that while the railroads' costs of owning and maintaining their rights-of-way consume about one-fourth of the railroad revenue dollar, "Comparable costs paid as user charges by motor carriers regulated by the Interstate Commerce Commission take less than one-twentieth of those carriers' revenues. Airline passengers pay 8% and air shippers 5% into the Airport and Airway Trust Funds. Waterway users pay nothing."

We are not suggesting that the users of these facilities be deprived of them, nor even that they pay fully compensatory user fees: to do so would probably put them out of business. We suggest only that policy-makers and legislators keep these figures in mind—and in perspective—as they ponder the future of railroads.

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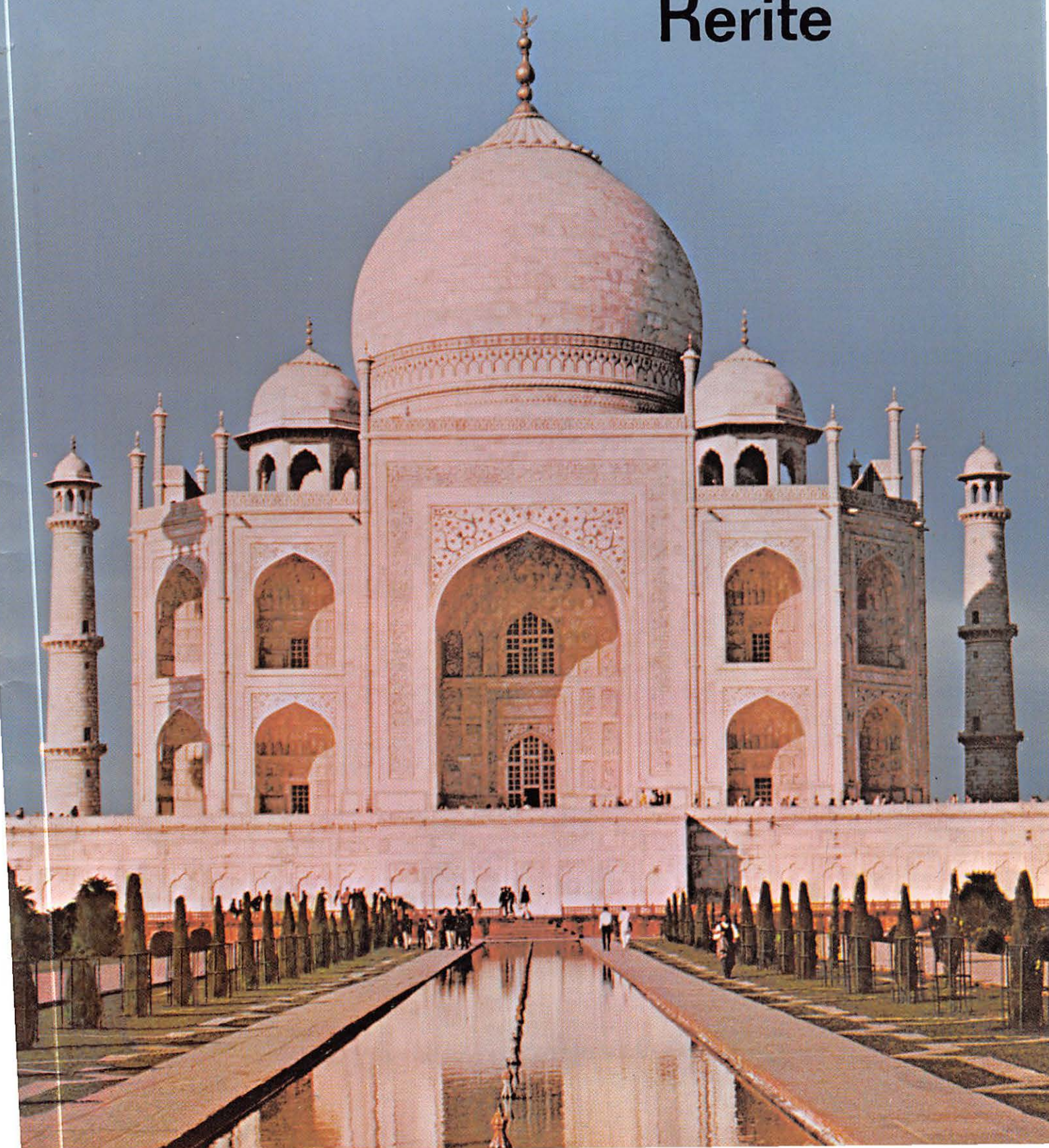

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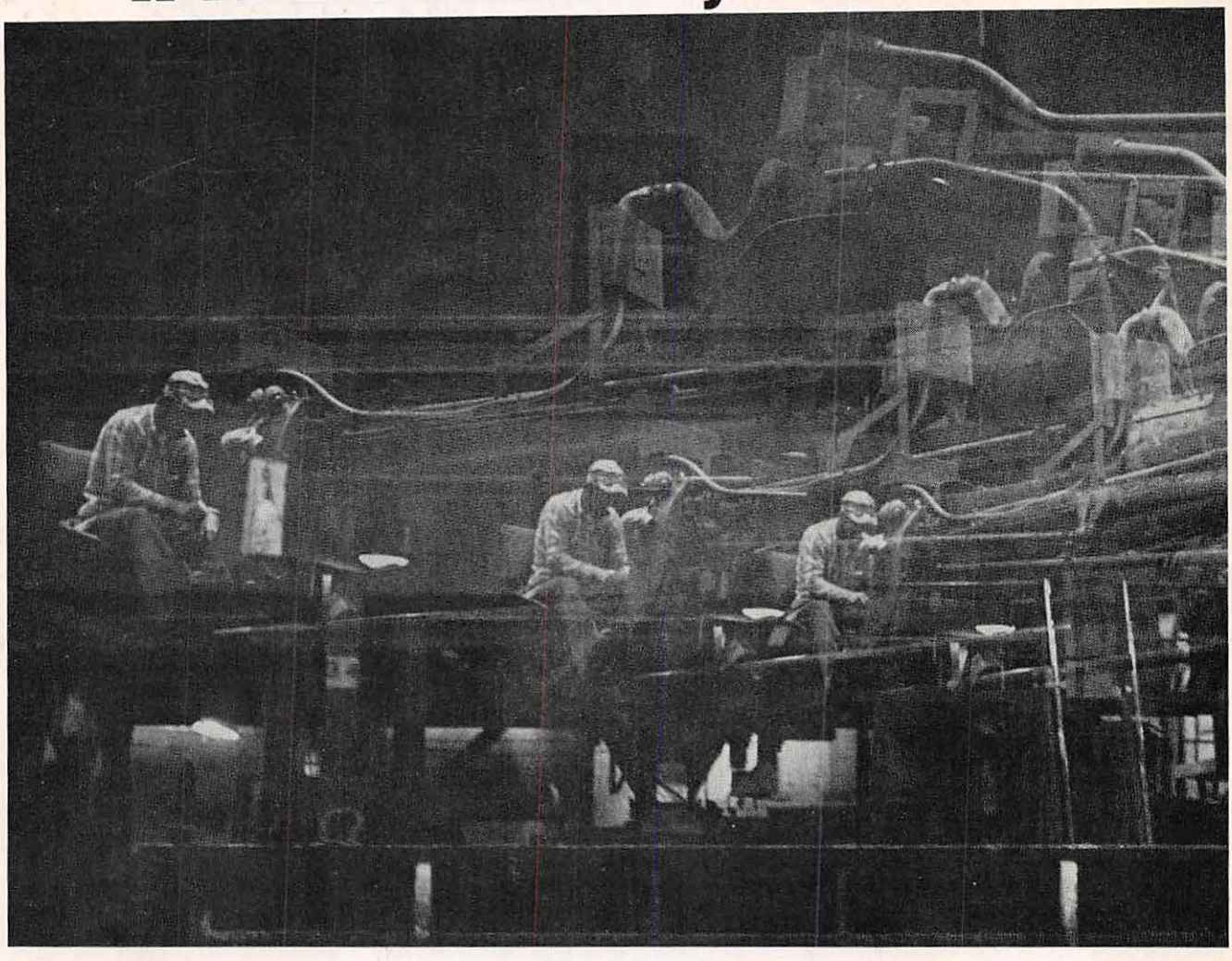

WMATA is the new subway system under construction in our nation's capital. And while work is underway there, other elements of the system are taking shape elsewhere. In the Rockwell International Transportation Equipment Division plant in Atchison, Kansas, for example.

The photo above shows one of the division's sand slingers in action. It's a mobile, high-speed device that rams sand into molds, molds of outstanding consistency, which are used to cast our transit car truck assemblies.

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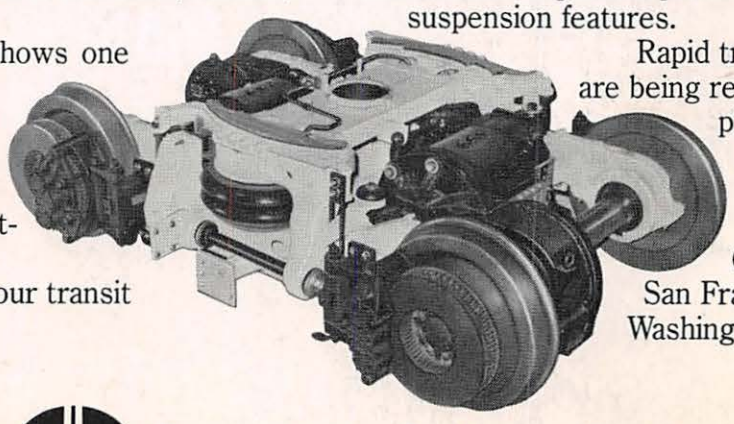

Rapid transit systems are being revitalized, built and planned throughout the nation. And Rockwell is a part of it in New York City and in San Francisco, as well as Washington, D.C.

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